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NOTES FROM A HIGH-SCHOOL REGISTRAR

ATTENDANCE RECORDS

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In the modern city high school, there is the same need of a planning department as in the modern commercial institution. For the routing of "material" through the "works," the office of the high-school registrar, whether this official be given such title or not, must gain increasing recognition. The application of modern business methods to the routine and detail of high-school administration can but result in more efficient work throughout the institution.

As an example of the results of study given the problem of high-school attendance records, I shall describe the forms worked out by me for the school with which I am connected. Wherever meeting our needs, ideas have been borrowed from forms in use elsewhere, though it is believed that the results reached may offer, in their turn, suggestion to others.

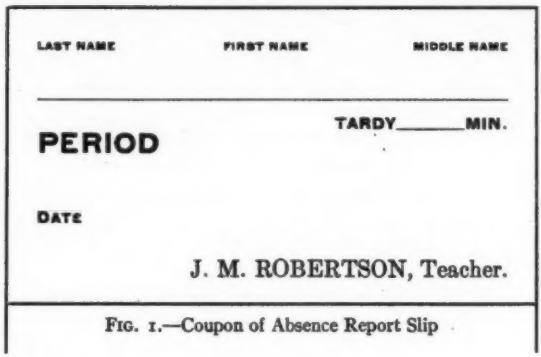
To make clear something of our local conditions, I will say that our school is located in a city of about 35,000 and has had a total registration of 1,600 pupils during the year now closing. The average daily attendance is about 1,325. On account of the inclusion of a rather large transient or tourist population in the figures given and of the modern lack of proper ideals of application among the student body as a whole, attendance totals are considerably

influenced. The school is growing at the rate of approximately two hundred per year, and in the evolution from a small high school to one of metropolitan proportions, the need for closer count of attendance was made evident. The classroom system did not seem to be handling the situation adequately, and centralization of clerical and administrative work was determined upon. Under the new plan all clerical work including register-keeping, reports of attendance, answering of questionnaires, etc., is handled in the Registrar's office and from there all follow-up is made.

In outlining the details of routine necessary to meet the local conditions, both with regard to the pupil and with regard to the clerical help to be allowed us in the office, it was soon found that the report for the day of pupils absent from the recitations, as formerly made by each recitation teacher at the close of the day, would not meet our needs. In the bringing of the individual pupil's reports together, this method entailed more clerical work than we could provide for, and in the delay resulting before these individual reports were available disciplinary measures were rendered less effective. The following plan then is the result of a year's study of the situation and of two years' trial of the methods determined upon.

At the beginning of each recitation period, the recitation teacher takes the roll of the class, noting in the classbook any absentees and filling out for each individual absent one of the coupons shown in Fig. 1. These coupons are printed in strips of five on a heavy paper, a light paper being less easily handled in filing. The strips are padded and, where a school has its own printing plant as ours does, may have the teacher's name printed. This saves time in writing the slip or renders unnecessary the use of a rubber stamp. If no pupil is absent, a dated slip for the period, with line drawn in the name space, is sent in. In this way each teacher is accounted for, and fewer failures to report will result. For tardiness, the number of minutes is entered and must be made up by the pupil staying the actual time or an extended time at the end of the school day. Where the necessity of correcting a report occurs, a correction slip is made out, if the original has been collected. The coupons are placed in a small "bull-dog"

clip screwed to the frame of the entrance door and located where it may be reached by the collector with the least amount of disturbance of the class. The clip may be used for notices to the teacher or in general for all written material in-coming to the teacher or out-going to the office. After completing the absence report, the teacher checks the absence cards of those out the previous day, signs them, and notes their receipt by a proper mark in the class-book record. If these details are carefully and promptly handled with each class, the teacher will find a salutary effect upon the


LAST NAME FIRST NAME MIDDLE NAME

TARDY_____MIN.

PERIOD

DATE

J. M. ROBERTSON, Teacher.

FIG. 1.—Coupon of Absence Report Slip

class and little, if any, time taken from the recitation period itself, unless the class is a very large one.

In the office of each department head we have assigned a pupil, usually from the commercial department, for office duty during each period of the school day. This pupil makes the round of the rooms of that department and collects the absence report slips and such other material for transmission to the office as the clip may contain. The collector receives from the Registrar's office at the beginning of the period, the department envelope showing where collections are to be made during that period and containing notices to teachers, etc., and after sorting the collected slips alphabetically, they are placed in the envelope and this is returned to the Registrar's office. If a telephone is available in each room reports may be made by its use, though it would seem to me that the written slip should still be used as a check upon the verbal

report. As soon as the slips for the first period arrive in the office, the final alphabetical arrangement of the slips for the school as a whole may begin. If this is carefully done and later periods compared with the preceding, cases needing investigation may be noted at once and attention to them be given. This will bring immediate action in cases where the pupil has left the grounds during the school day without permission from the proper administrative officer or is otherwise absenting himself without sufficient reason.

From the absence slips thus turned in, the absence card is made out for each pupil reported and must be obtained by him from the office before reporting again in any of the exercises missed (Fig. 2).

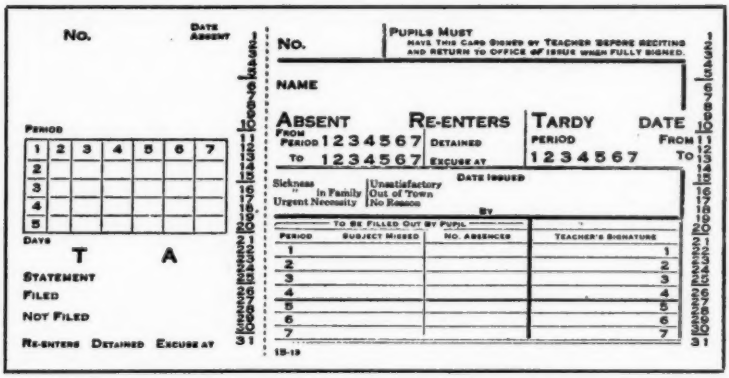


FIG. 2.—Absence Card for readmission to class (5×3 inches)

The card is ordinarily obtained before school in the morning and is given to the pupil upon presentation of a statement from the parent or guardian. This statement should show the date and period of and the reason for the absence, these items being checked with the teacher's reports as shown on the card. When the card is issued to the pupil the stub is retained in the office and is used as the record from which the transcript is made to the register card (Fig. 3). It will be noted that the stub has provision for the entry of all periods of a seven-period (as provision is made in printing the card) day for five consecutive days of absence. If the card is not called for on the second day, the reports for that day

are added to the same card and stub, and so on until the pupil returns or a report of "withdrawal" is received. After five days' consecutive absence the teacher need no longer report, as the

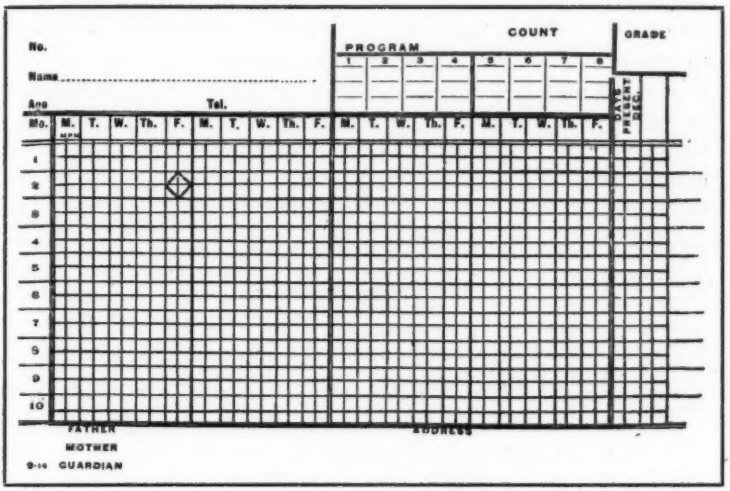


FIG. 3.—Register Card (6×4 inches ruled in colors)

pupil is marked "left." Where able to reach the home by telephone, prompt reports are usually possible. If the card is not called for on the second day and further absence slips do not appear,

THIS PUPIL WAS NOT REQUIRED TO OBTAIN CARD FOR ABSENCE REPORTED BY YOU. PLEASE STATE WHETHER RECORD IS CORRECT.

FIG. 4.—Follow-up for Absence Card uncalled for

then the teacher has not required the card for re-entrance to class and this failure may be looked into by a rubber stamp follow-up shown in Fig. 4, for of necessity this requirement must be enforced.

If no report has been sent in by the teacher, though the pupil is absent from the class, this will appear on the stub, as there will be no check in the square for that period. The attention of the teacher may be called to this oversight by a typewritten or rubber stamp follow-up shown in Fig. 5, for again such failure conduces to laxness in the handling of the absence problem.

To the objection that the cards cannot be handled rapidly enough at one place to prevent delay at the opening of school, I would say that we rarely need more than two at the counter to handle these cards. There is of course a tendency to crowd in within the last five minutes, but tardiness for this cause may be

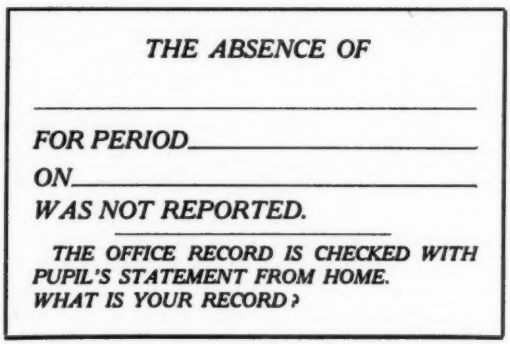


FIG. 5.—Follow-up on failure to report absence

handled as any other, and will decrease promptly if proper measures are used. On extraordinary occasions, an absence of one-half of our enrolment can be promptly handled by sufficient subdivision of the cards alphabetically arranged and by supplementing the office force with one or two teachers having a free period called in to handle a subdivision.

The absence card should be signed by each teacher of the classes missed and returned to the office of issue. This gives a check upon the pupil's return to the exercises for which he is enrolled, a matter of some importance where a pupil is counted as "left" after five days' consecutive absence, and so is no longer reported by the teacher. Where the school is large the detail of checking the return of the card may be so great, that it may be more simple to

notify each teacher concerned of such re-entering pupil, using a regular printed slip provided for notices of entrance or withdrawal. If this is found to lessen the efficiency of the card, however, its return may be insisted upon, in which case consecutive numbers given the cards as issued will assist greatly in balancing them with the stubs.

The statement presented by the pupil may require checking for authenticity of signature. Where one clerk is regularly handling these statements, this necessity will readily be brought to the attention of such clerk.

Schools which do not have free interchange between periods may not need such detailed check as is indicated in the use of this absence card, but this close check has been forced upon us by the local conditions.

Where the state requires a definite form of register, that form would necessarily be used. We obtained permission to use the card shown in Fig. 3, this card following as closely as possible the form of the state register. The report is made on the basis of quarter-day attendance; if any part of one quarter is lost, in general the whole quarter counts as lost. Absence is shown by a suitable mark placed in the proper one of the four divisions of the square for the day. A whole day's absence may be shown as in the figure, tardiness by the number of minutes missed or the number present, as may be decided upon. The card allows space for the pupil's program in case this is necessary to determine the "count" —the valuation of the pupil, if part-time—or for other reason.

A card record can be handled much more easily than a book record, unless in the single item of taking totals for the month. By the use of simple forms ruled as needed, and with an adding machine available, the matter of totals is simplified. The grade is indicated on the card by the year number and whether boy or girl by the letter B or G, thus B 9 or G 12. If small metal markers showing the year are used, with the boys' cards in one file drawer and the girls' in another, each year marker may be kept in its own separate row from front to back, and the totaling by grades is further simplified.

Where no special requirements of register are made, it would seem that the stubs filed alphabetically would give sufficient record for each pupil.

Where a pupil is detained in the office for administrative reasons beyond the time for beginning his class, this may be explained to the teacher by the use of the slip shown in Fig. 6.

If the necessity arises for a pupil to take a study period for special work with a recitation teacher, the request for the excuse may come on the form shown in Fig. 7. The study teacher then retains stub numbered 1 and the pupil returns to the study teacher the next day stub numbered 2 with the O.K. of the teacher to whom he reported.

No.....	PASADENA HIGH SCHOOL No..... PASADENA, CALIF.
To	OFFICE EXCUSE TEACHER WILL TAKE UP AND RETURN TO OFFICE
.....	.....
Period.....	Detained in the office .....period
Reason	Reason .....
Time	Time.....
Date.....	Date.....
O.K.....	.....
	14-18

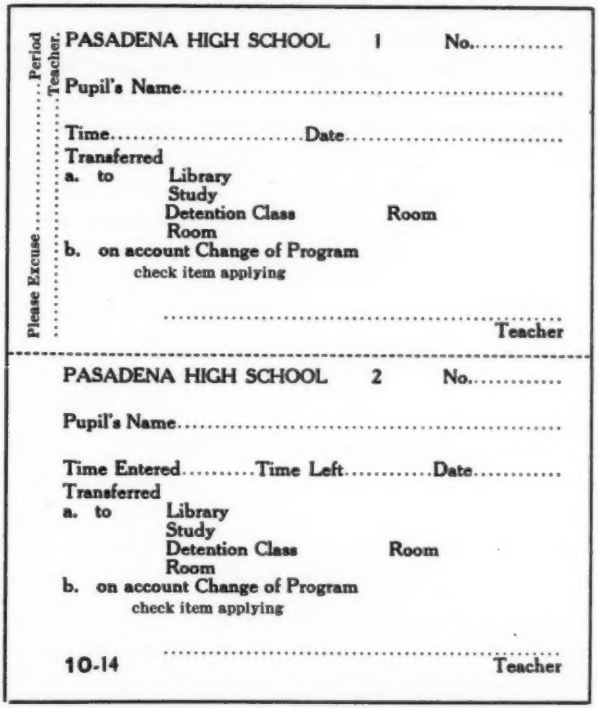
FIG. 6.—Office Excuse

For transfer to the library, where, on account of the large number going at certain times of the day, the previous method of transfer is not wholly satisfactory, the form shown in Fig. 8 may be issued to the pupil by the teacher of the preceding period.

The slip is collected at the entrance to the library and is sent promptly to the study-room teacher with whom the pupil is due. This prevents an absence report being turned in for him.

In the case of a class excursion arranged for pupils from the school, which will take time from other classes, the date of the excursion is posted a week ahead. A list of the pupils to go is

furnished the Registrar's office and a card similar to Fig. 2, but of another and easily distinguishable color, is placed in the hands of each of these pupils before the first period exercise of the day preceding the excursion. This card is signed by the teachers of the classes to be missed and during the excursion is collected by the


Please Excuse ..... Period ..... Teacher.

PASADENA HIGH SCHOOL 1 No.....

Pupil's Name.....

Time..... Date.....

Transferred

a. to Library
Study
Detention Class Room
Room

b. on account Change of Program
check item applying

.....
Teacher

PASADENA HIGH SCHOOL 2 No.....

Pupil's Name.....

Time Entered..... Time Left..... Date.....

Transferred

a. to Library
Study
Detention Class Room
Room

b. on account Change of Program
check item applying

.....
10-14 Teacher

FIG. 7.—Transfer Slip. Transfer from study other than to Library

teacher in charge. The cards collected are then filed in the Registrar's office by this teacher and any failure of a pupil to report as arranged can be investigated.

These four suggestions will indicate some of the provisions necessary to prevent unnecessary absence reports through keeping the recitation or study teacher informed of cases of legitimate excuse.

In conclusion, emphasis should be placed upon the following, as advantages found in the use of the system outlined above.

A prompt report is obtained, allowing prompt follow-up of delinquents.

A minimum of time is taken from the teacher and from the class.

The teacher is relieved of the drudgery of the register and its bookkeeping.

The teacher is relieved of all follow-up except that of the actual work of the class missed by the pupil.

The emphasis being thus placed upon the classwork, avoidable absences should be decreased.

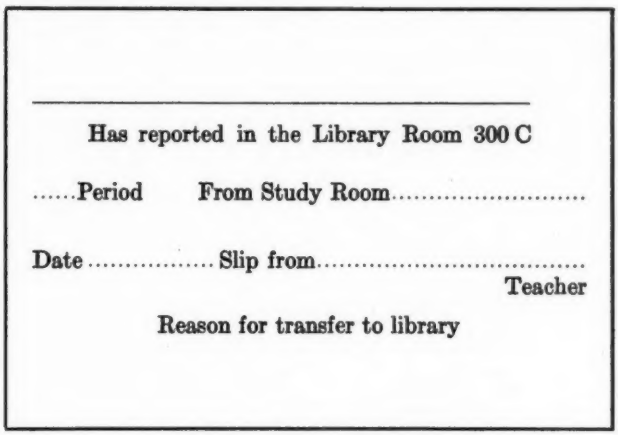


FIG. 8.—Library Transfer Slip

Standardization can be reached in matters of routine, so that each pupil is treated as on the same basis and each one knows what requirements are to be met.

If a system of this sort is closely correlated with the other details of the Registrar's office toward reaching standard and efficient methods and if it is supplemented by statistical studies to show the effects of educational losses upon the efficiency of the school as a whole, it will add much toward the smooth operation of the necessary machinery. Whatever system is used must be flexible enough to change with the needs of the pupil and the school and must not for a moment overshadow the primary purpose—that of the best interests of those for whom it is working.

COMPARATIVE COST OF INSTRUCTION IN HIGH SCHOOLS

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The purpose of this paper is to make a comparative study of the cost of instruction in various high schools and in several departments of instruction. The data were obtained from nineteen high schools in the northeastern part of Illinois. Principals and teachers filled out statistical blanks. A sample is shown below. The enrolment at mid-year was the basis for the number of pupils per teacher. In addition to the information thus obtained a letter was sent to each school from which was ascertained the length of term and the number of subjects carried by each pupil.

BLANK SENT TO EACH TEACHER

Recitation Periods

Grade
I. Subject
Minutes
No. Pupils

Grade
II. Subject
Minutes
No. Pupils

Grade
III. Subject
Minutes
No. Pupils

Grade
IV. Subject
Minutes
No. Pupils

Grade
V. Subject
Minutes
No. Pupils

Total Minutes
Total Pupils

Laboratory and Shop Periods

Grade
I. Subject
Minutes
No. Pupils

Grade
II. Subject
Minutes
No. Pupils

Grade
III. Subject
Minutes
No. Pupils

Grade
IV. Subject
Minutes
No. Pupils

Total Minutes
Total Pupils

The blanks also provided for a schedule of the rest of each teacher's activities under the following heads: Consultation Periods, Study Periods, Reading Students' Papers, Definite Preparation of Specific Lessons, Teachers' Meetings, Other Overtime. At the foot of the blank were scheduled the total time spent by each teacher and the yearly salary.

ELEMENTS OF COST

Cost was based upon the following points:

1. Salary of teacher. The salary of the principal was not used in the calculations unless the principal taught two or more classes.

2. Number of pupils per teacher.

3. Teaching time of teachers. This factor depends upon the time the teacher actually instructs pupils each day, in either recitation or laboratory, and upon the length of the school year.

For convenience, the high-school subjects were divided into two groups:

1. *Recitation Subjects*
   - *a*) English
   - *b*) Mathematics
   - *c*) Foreign Language
   - *d*) History and Civics

2. *Laboratory Subjects*
   - *a*) Science: Physics, Chemistry, Botany, Zoölogy
   - *b*) Manual Training
   - *c*) Domestic Science

In making up the data for the different subjects, a fractional part of a teacher was employed in the smaller schools.

A separate average was made for the recitation subjects in order to include teachers of mixed subjects. For example, a teacher might have classes in English and in mathematics or some other subject. Also it was thought best to compare these recitation subjects as a group in addition to comparing them with all of the subjects, recitation and laboratory.

DEFINITION OF TERMS

1. Number of teachers considered. In calculating the data for each subject, as, for example, English, there may have been five teachers who taught English in one or more classes. Those were selected who taught English only, except in a small school where a fractional part of a teacher was counted.

2. Class refers to recitation group of pupils.

3. Number of classes per teacher means the number of recitations the teacher has each day.

4. Number of pupils per teacher means the total number receiving instruction from the teacher per day.

5. Number of pupils per class is the size of each recitation group.

6. Salary per teacher means the annual salary.

7. Cost of pupil per teacher is equivalent to salary of teacher divided by the number of pupils per teacher.

8. Length of recitation period is the time given each day for the recitation of one class.

9. Teaching time of teacher per day is the total time the teacher gives to actual instruction each day, either in recitations or in laboratory work.

10. Year-minutes of teacher amount to the same as the teaching time of the teacher per day, except that year-minutes take into consideration the length of the school year. A school year of 40 weeks was made the standard in this study. If a teacher teaches 5 periods of 40 minutes each per day and the school year is 10 months, then this teacher has 200 year-minutes ($5 \times 40 = 200$). In case the term is 36 weeks, the teacher has 180 year-minutes (36/40 of $200/1 = 180$).

11. Cost per year-minute is found by dividing the cost per pupil per teacher by the number of year-minutes of the teacher. If the cost of pupil per teacher is \$10 and the teacher teaches 200 minutes per day for 10 months, then the cost per year-minute is 5 cents (\$10 ÷ 200 = 5 cents).

Let S be the salary of the teacher; T be teaching-time or year-minutes of the teacher; P be the number of pupils per teacher. Then:

$$\text{Cost of pupil per teacher} = \frac{\text{Salary of teacher}}{\text{No. pupils per teacher}} = \frac{S}{P}$$

$$\text{Cost per year-minute} = \frac{\text{Cost of pupil per teacher}}{\text{Year-minutes of teacher}} = \frac{S}{PT}$$

The cost per year-minute is the most significant unit in this study. It is a fairer unit than the cost per pupil, because it takes into account the time that is distributed to each pupil.

Number of pupils per teacher is the greatest variant in every case.

One pupil is equivalent to 2 year-minutes or $10 of salary of a teacher in English.

One pupil is equivalent approximately to 5 year-minutes and to $25 of salary in case of manual training.

TABLE I

RECITATION PERIODS FOR ALL RECITATION SUBJECTS

	No. Teachers Considered	No. Classes	No. Classes per Teacher	No. Pupils per Class	No. Pupils per Teacher	Average Salary per Teacher	Cost of Pupil per Teacher (Dollars)	Length of Recitation (Minutes)	Year-Minutes of Teacher	Cost per Year-Minute in Cents	Length of School Year (Weeks)
Riverside	2	12	6.0	15.4	92.5	$ 900	9.7	45	257	3.77	38
Morgan Park	5	28	5.6	21.0	116.5	1,070	9.3	45	252	3.70	40
Maine	7	32	4.6	17.8	81.6	914	11.2	40	184	6.09	40
Lyons	20	88	4.4	21.9	95.5	1,370	14.3	45	198	7.23	40
Thornton	13	62	4.8	20.1	96.0	1,018	10.6	40	192	5.52	40
Hinsdale	5	21	4.2	15.2	63.6	830	13.1	51	209	6.27	39
Deerfield	13	63	4.8	17.4	83.0	1,219	14.7	42.5	189	7.78	37
Blue Island	9	49	5.4	16.9	91.3	1,211	13.3	40	216	6.15	40
New Trier	18	92	5.1	18.7	95.2	1,294	13.6	40	189	7.20	37
Lockport	6	30	5.0	16.4	81.2	858	10.6	45	214	4.95	38
Streator	13	71	5.5	16.8	90.8	1,027	11.3	43	224	5.01	38
Rockford	45	230	5.1	20.8	105.9	958	9.0	45	229	3.93	40
Elgin	18	93	5.2	22.4	116.5	933	8.0	45	222	3.60	38
East Aurora	14	69	4.9	21.4	104.9	921	8.8	40	196	4.49	40
University High School	25	84	3.4	16.2	55	1,376	25.0	40	116	21.55	34
DeKalb	9	47	5.2	18.6	96.7	1,000	10.3	45	222	4.64	38
West Aurora	10	50	5.0	19.5	97.5	1,045	10.7	40	200	5.36	40
LaSalle	10	55	5.5	18.2	100.1	1,125	11.2	45	235	4.77	38
Bloom	7	41	5.9	18.8	110.9	890	8.0	40	236	3.39	40
Average	....	....	5.0	18.6	93	$1,050	.....	43	....	.....	.....

One pupil is equivalent approximately to 3 year-minutes and to $13 of salary average for all subjects.

The number of pupils per teacher is the greatest variant in making up the cost-per-year-minute. This factor is often given too little notice by school boards. To use a common example, suppose a school is introducing manual training. In order to show the public that economy is being used, the board will spend $300 for equipment sufficient to accommodate ten pupils per class. Suppose there are five periods each day, this will mean instruction

for 50 pupils. Let the salary of the teacher be $1,000; cost of equipment and salary of teacher is $1,300; cost for second year is the $1,000 salary of the teacher. For two years, the cost of instructing 100 pupils with the cost of equipment is $2,300. Let us suppose the board spends $600 for equipment sufficient for 20 pupils

TABLE II

RECITATION PERIODS FOR ENGLISH*

	No. Teachers Considered	No. Classes	No. Classes per Teacher	No. Pupils per Class	No. Pupils per Teacher	Average Salary per Teacher	Cost of Pupil per Teacher (Dollars)	Length of Recitation (Minutes)	Year-Minutes of Teacher	Cost per Year-Minute (Cents)
Riverside	1	3	6	17.3	104	$ 900	8.7	45	257	3.39
Morgan Park	1	3	6	28.7	172	110	6.4	45	270	2.37
Maine	1	3	4	23	92	800	8.7	40	160	5.45
Lyons	1	5	5	22	110	1,500	13.7	45	225	6.10
Thornton	3	15	5	22	112	967	8.6	40	200	4.30
Hinsdale	1	5	5	17	85	775	9.1	51	249	3.66
Deerfield	3	13	4.3	18.4	79	1,067	13.6	42.5	168	8.10
Blue Island	2	11	5.5	20.0	110	1,100	10	40	220	4.55
New Trier	4	18	4.5	20.1	95	1,325	13.9	40	167	8.32
Lockport	1	3	5	25.0	125	850	6.8	45	214	3.18
Streator	2	8	4	24.7	99	1,150	11.7	43	163	7.18
Rockford	8	42	5.3	22.3	118	913	7.7	45	238	3.25
Elgin	5	26	5.2	24.6	128	856	6.7	45	222	3.02
East Aurora	3	16	5.3	23.6	125	900	7.2	40	212	3.40
University High School	5	17	3.4	22.2	80	1,440	18.0	40	116	15.51
DeKalb	2	10	5	18.2	91	775	8.5	45	214	3.97
West Aurora	1	4	4	22.2	89	1,200	13.5	40	160	8.45
LaSalle	2	9	4.5	21.1	70	875	12.5	45	193	6.48
Bloom	1	6	6	18.8	113	850	7.5	40	204	3.13
Average	....	....	4.9	21.7	106	$1,018		43		

* Mr. Harris presents tables similar to the English table for each of the following subjects: Mathematics, Foreign Language, History and Civics, Science, including Physics, Chemistry, Botany, and Zoölogy, Manual Training, and Domestic Science.

Still another set of tables presents the per-day-minutes data on Undistributed Time at School, Other Overtime, Home Work, Reading Students' Papers, Definite Preparation for Specific Lessons, Consultation Periods, Study Periods.

The more important data presented in these tables are given in the summary tables below.—EDITORS.

during the period. Then with five periods per day, 100 pupils would have been accommodated at a cost of $1,000 for salary and $600 for equipment, a total of $1,600, as compared with $2,300 in the former case. Here is a saving of $700. In the succeeding years, the saving would be still greater; in fact the instruction would cost just half as much.

It seems that a class of 10 pupils ought not to be entitled to more than 20 minutes for recitation, if the standard for the size of the class is 25 pupils and the length of the recitation period is 40 minutes. Another plan is to have such a small class recite every other day, covering double work for the one recitation. Either of these plans would reduce the cost per year-minute for that subject approximately one-half.

TABLE III

NUMBER OF PUPILS PER TEACHER

	Recitation Subjects	English	Mathematics	Foreign Language	History and Civics	Science	Manual Training	Domestic Science
Riverside	92.5	104	99	90	84	62	52*	42*
Morgan Park	116.5	172	114	75	120	76	.....	.....
Maine	81.6	92	112	64	76	77	20*	32*
Lyons	95.5	110	92	92	93	55	51	.....
Thornton	96.0	112	107	75	118	52	67	57
Hinsdale	63.6	85	64	87	64	54	.....	.....
Deerfield	83.0	79	107	92	113	74	48	52
Blue Island	91.3	110	108	89	105	86	46	96
New Trier	95.2	95	110	94	101	85	57	48
Lockport	81.2	125	102	54	93	53	61	46
Streator	90.8	99	89	109	123	58	55	115
Rockford	105.9	118	110	115	105	111	84	80
Elgin	116.5	128	105	87	128	81	62	78
East Aurora	104.9	125	88	91	96	84	.....	.....
University High School	55	80	60	45	78	66	36	57
DeKalb	96.7	91	106	79	80	80	51	34
West Aurora	97.5	89	107	88	142	101	.....	.....
LaSalle	100.1	70	98	100	109	75	44	60
Bloom	110.9	113	135	97	101	54	55	62
Average	93	106	101	85	102	73	55	65

* Not considered in the average, because teacher was not employed for full day.

Recitation average includes teachers of mixed subjects, hence it may not check for average of columns 2, 3, 4, and 5.

In such subjects as History and Civics, English, Science, Manual Training, and Domestic Science, pupils of different years can be instructed in one class. Here again the saving is above one-half. In English and History, the courses can be arranged so that no pupil will be repeating; for example, the first- and second-year pupils can take Ancient History one year, the following year they can take Mediaeval History, and the third year Modern History.

However, it might happen that the second-year pupils mentioned above have had Ancient History. In that case, the combination class can take Mediaeval History together and the following year Modern History. The section of the class that has not had Ancient History can be combined with the class below it the next year. The standard of work for those who have had two years of work can be made higher than for the beginners in the course.

TABLE IV

NUMBER OF YEAR-MINUTES PER TEACHER

	Recitation Subjects	English	Mathematics	Foreign Language	History and Civics	Science	Manual Training	Domestic Science	Length of School Year (Weeks)
Riverside	257	257	257	257	257	283	.....	.....	38
Morgan Park	252	270	225	225	270	290	.....	.....	40
Maine	184	160	200	200	160	200	.....	.....	40
Lyons	198	225	180	194	180	248	248	.....	40
Thornton	192	200	220	200	200	227	240	240	40
Hinsdale	209	249	199	294	199	273	.....	.....	39
Deerfield	189	168	236	236	236	220	236	236	37
Blue Island	216	220	240	240	200	240	260	204	40
New Trier	189	167	185	159	185	222	296	185	37
Lockport	214	214	214	228	257	171	299	257	38
Streator	224	163	204	265	204	226	261	285	38
Rockford	229	238	225	247	216	248	270	142	40
Elgin	222	222	222	214	214	299	257	257	38
East Aurora	196	212	180	200	200	320	.....	.....	40
University High School	116	116	119	119	119	135	204	156	34
DeKalb	222	214	235	214	214	257	257	257	38
West Aurora	200	160	240	200	240	240	.....	.....	40
LaSalle	235	193	257	257	257	253	242	242	38
Bloom	236	204	280	240	240	240	240	280	40
Average	209	203	216	220	218	242	255	229	.....

Recitation average includes teachers of mixed subjects, hence it may not check for average of columns 2, 3, 4, and 5.

The percentage table for cost-per-year-minute shows that the University High School pays 329 per cent above the average for Foreign Language. This is the highest percentage of any subject in the whole list.

Average salary of teacher is $1,460
Number of pupils per teacher 45
Teaching time of teacher ..... 119 year-minutes
Cost-per-year-minute ..... 27.31 cents

Suppose the salary remains the same, $1,460. Let the teacher have five periods per day instead of 3.5. Let the size of the class be 25 instead of 12.8. Let the term be 40 weeks instead of 34. Then we shall have: salary, $1,460; number of pupils per teacher, 125; teaching time of teacher, 200 year-minutes. From these figures the cost-per-year-minutes is 5.84 cents as compared with

TABLE V

COST OF PUPIL PER TEACHER IN DOLLARS

	All Subjects, Recitation	English	Mathematics	Foreign Language	History and Civics	Science: Physics, Chemistry, Botany, Zoology	Manual Training	Domestic Science	Average for All Subjects
Riverside	9.7	8.7	9.1	10.0	10.7	16.1	6.7	11.9	10.5
Morgan Park	9.3	6.4	9.7	12.0	9.2	15.8	.....	.....	10.4
Maine	11.2	8.7	7.2	11.8	11.2	13.6	19.0	10.9	12.6
Lyons	14.3	13.7	16.4	14.4	15.1	22.3	29.4	.....	18.1
Thornton	10.6	8.6	11.9	15.4	9.8	20.5	16.4	17.5	13.8
Hinsdale	13.1	9.1	13.3	8.6	15.6	15.8	.....	.....	13.6
Deerfield	14.7	13.6	12.2	15.3	11.6	16.2	28.1	19.2	18.9
Blue Island	13.3	10.0	10.2	13.5	9.5	15.1	15.2	10.4	13.4
New Trier	13.6	13.9	13.2	13.5	11.6	16.2	24.6	21.9	16.7
Lockport	10.6	6.8	8.3	11.1	8.6	19.8	17.2	19.6	14.1
Streator	11.3	11.7	14.7	10.6	8.1	17.3	25.5	8.7	13.8
Rockford	9.0	7.7	8.0	9.3	9.1	9.2	12.8	8.8	9.5
Elgin	8.0	6.7	8.6	9.9	7.7	11.1	19.4	11.3	10.5
East Aurora	8.8	7.2	11.1	10.4	10.8	12.5	.....	.....	9.9
University High School	25.0	18.0	20.0	32.5	21.8	26.3	44.4	17.5	26.8
DeKalb	10.3	8.5	9.0	13.9	16.3	16.3	26.0	35.3	17.0
West Aurora	10.7	13.5	9.4	10.6	7.1	11.4	.....	.....	10.8
LaSalle	11.2	12.5	15.7	10.5	8.3	14.7	37.5	15.0	16.0
Bloom	8.0	7.5	7.0	9.5	9.4	24.1	23.6	12.9	13.2
Average	11.7	10.1	11.3	12.2	11.2	17.1	23.1	15.8	14.2

Column 1 is the average for subjects that have recitation. Columns 2, 3, 4, and 5 may not check exactly with column 1 because teachers of mixed subjects were not considered in these.

Column 9 was obtained by taking four times column 1, adding columns 6, 7, and 8, and dividing the result by 7.

27.31 cents in the present case. The average for all the schools in Foreign Language is 6.37.

In the case of Thornton, the salary is $967 in English, size of class 22 pupils. If the size of the class were increased to 25 pupils, the teacher could then receive $1,075 with the same cost per pupil. The thought is that the teacher receiving the higher salary will do better work and will more than make up for the disadvantage in

the increased size of the class from an instructional standpoint. Such a combination might not be possible at Thornton because they have only three teachers of English.

In Foreign Language, Elgin has three teachers; each teacher has 5 classes and 17.4 pupils to a class; the salary is $862 per teacher; total pupils, 52; total salary, $2,586. Suppose the classes

TABLE VI

COST OF PUPIL PER TEACHER BASED UPON TEACHER'S SALARY IN DOLLARS

Comparison of cost in high schools in various parts of the United States

University High School	$26.8	St. Louis	$16.8
Deerfield	18.9	Scranton, Pa.	15.4
Lyons	18.1	San Francisco	13.8
DeKalb	17.1	Baltimore	13.3
New Trier	16.7	Washington, D.C	13.2
LaSalle	16.0	Chicago	12.4
Lockport	14.1	Cambridge, Mass	11.7
Thornton	13.8	Spokane, Wash	11.4
Streator	13.8	Detroit	11.1
Hinsdale	13.6	Dallas, Tex	9.9
Blue Island	13.4	Minneapolis	9.0
Bloom	13.2	Oklahoma City	8.4
Maine	12.6	Omaha	8.4
West Aurora	10.8	Savannah, Ga	8.2
Riverside	10.5	Covington, Ky	8.1
Elgin	10.5	Buffalo	7.6
Morgan Park	10.4	Birmingham, Ala.	5.6
East Aurora	9.9	Memphis, Tenn	5.3
Rockford	9.5	Wichita, Kan	4.2
Average	14.2	Average	10.2
Median	13.6	Median	9.9

Data computed from *U.S. Bureau of Education Bulletin, No. 5* (1912), p. 86.

The cost per pupil as given in the bulletin was divided by 4, since pupils have 5 subjects in each of the 19 schools of this study.

were regrouped with 26 pupils to a class, then two teachers could handle the same number of pupils. Then each of these teachers could receive $1,293, while the cost per pupil would be the same in each case. Of course there is a question whether the higher priced two teachers could give the larger classes better instruction than the three low-priced teachers. As was said above, this combination

might not be possible. It would be especially difficult where two or three foreign languages are offered.

The questions of how many pupils a teacher should instruct and how much time a teacher should put in each day involve many complications. Some teachers can handle more pupils than others. Some can put in more time than others without injuring their health.

TABLE VII

AVERAGE FOR EACH SUBJECT IN THE SEVERAL SCHOOLS

Number of classes per teacher, average	5
Average in one school for one subject: highest	7
Average in one school for one subject: lowest	3.4
Number of pupils per class: average	18.6
Average in one school for one subject: highest	28.7
Average in one school for one subject: lowest	12.8
Length of recitations, average	43 min.
Most frequent	40 and 45 "
Highest	51 "
Lowest	40 "
Number of pupils per teacher: average	
1. For recitation subjects	93
Highest	172
Lowest	45
2. For laboratory subjects: average	64
Highest	111
Lowest	34
Salary of teachers: average	$1,074
Highest	1,735
Lowest	600
Cost per pupil per teacher: average	14.2
Highest	44.4
Lowest	6.4

How shall we economize? This is the task of the supervisor and the public. In general the public will be satisfied if the teacher puts in long hours and receives a low salary; this is its way of measuring economy. The supervisor knows the weight to attach to these considerations, but he also considers the number of pupils who receive instruction. His problem is to know how many pupils a teacher can handle with economy of cost and efficiency of instruction. The classes may be larger in some subjects than in others.

The supervisor looks at the time in a different way from the public. He knows that a teacher has a certain amount of energy, and that when that energy is used up, it is a waste of time to have the teacher appear before his classes and squander their time. On the other hand, he is confronted with the added cost where a teacher has few periods each day. Suppose a teacher has only three periods a day of not more than 45 minutes each. What does he do with the extra time? Does he use it to improve the work of his classes or does he spend his energies in some side occupation? How much outside time does each subject require? These questions cannot be answered definitely. Yet the supervisor must have some standard. He must have some general plan that will fit most of the cases.

The North Central Association of Colleges and Secondary Schools recommends that each teacher shall have not more than five periods of not less than 40 minutes each. It recommends that the size of the class shall not be greater than 30 (Report of 1912).

Superintendent Spaulding of Newton, Massachusetts, who has made a study of school expenses through a number of years with a view to cost efficiency, has his high-school teachers teach five periods a day with about 25 pupils for each class for recitation subjects. This study shows that the teachers of laboratory subjects put in about one and one-half more periods per day (about 60 minutes) than teachers of recitation subjects. On the other hand, the number of pupils taught in the recitation subjects per teacher is nearly twice as high as in the laboratory subjects.

With the increased demand for subjects that require laboratory work the problem of cost grows more important. The basis of cost in this study is the salary of the teacher. According to Updegraff's study (made for the year 1909, but finished in 1912) the salary of the teacher comprises approximately 70 per cent of the total school expense. The cost per pupil in high school is two and one-half times as much as in the elementary school.

There must be economy in the high schools. This paper attempts to show that the best way to economize is by having a standard for the size of classes and for the number of recitations per day for each teacher.

It is quite generally agreed that larger salaries command better teachers. I wish here to propose an equation in which the cost efficiency will increase as the salary of the teacher increases; at the same time I wish also to propose a standard for the teaching time of the teacher, and the number of pupils that a teacher should instruct each day.

These standards can be put into an equation which may be called *cost efficiency*.

Suppose a school pays an average salary of $1,200 to its teachers and that each teacher has just the right number of pupils each day (125 pupils) and that each teaches the standard number of minutes (200) each day, also that the school year is 40 weeks long. The *cost efficiency* of that school would be 1,200 units.

TABLE VIII

	Units	Rank		Units	Rank
Riverside	479	17	Streator	656	12
Morgan Park	741	10	Rockford	695	11
Maine	552	15	Elgin	777	5
Lyons	1,042	1	East Aurora	758	7
Thornton	751	8	University High School	351	19
Hinsdale	395	18	DeKalb	642	14
Deerfield	769	6	West Aurora	815	3
Blue Island	801	4	LaSalle	742	9
New Trier	930	2	Bloom	648	13
Lockport	517	16			

Suppose, however, that each teacher had only 100 pupils, the other conditions remaining the same, the *cost efficiency* in this case would be 100/125 of 1,200/1=960 units. If the number of pupils had been 130 and the other conditions remained the same, then the *cost efficiency* would be 120/125 of 1,200=1,120 units, since 130 is 5 above 125. In other words, there is a variation of 5 from the standard which gives the rate of 120/125.

In just the same way the teaching time of the teacher will vary when the number of year-units is above or below the standard of 200. (In case the school year is 40 weeks long, the teaching time of the teacher per day amounts to the same as the year-minutes of the teacher. In case the school year is less than 40 weeks, the year-minutes can be found by multiplying the teaching time of the

teacher per day by the proper ratio. For example, if the term is 38 weeks, the ratio would be 38/40.)

$$\text{Cost efficiency} = S \left\{ \frac{200 - d_1}{200} \right\} \left\{ \frac{125 - d_2}{125} \right\}$$

Where S stands for salary of teacher, d_1 is the number of year-minutes above or below the standard 200, d_2 is the number of pupils above or below the standard of 125. This equation is hardly fair to small schools, because it is impossible for them to readjust their standards for pupils and teaching time of teachers.

Applying the cost-efficiency equation to the schools in this study, these are the results:

$$\text{Cost efficiency} = S \left\{ \frac{200 - d}{200} \right\} \left\{ \frac{125 - d}{125} \right\}$$

The results here obtained are for recitation subjects only.

The salary of teachers, the number of pupils per teacher, and the number of year-minutes per teacher as worked out in the tables were used.

The data secured under:

Consultation Time, Study Periods, Undistributed Time at School, Preparation of Specific Lessons, Reading Students' Papers, and Other Overtime, indicate that each teacher spends from 5½ to 6 hours each day upon work for the school in addition to regular teaching time. It is hard to find out how accurate these data are, and for that reason they were not included in the time from which the cost per year-minute was obtained. Much of the overtime was due to special activities outside of school time, such as athletic work, literary societies, and entertainments. Teachers of recitation subjects usually had charge of one study period per day. This would bring their required time up to about the same as the laboratory subjects.

NOTE.—Mr. Harris makes the following suggestions for similar studies:

It is my opinion that the form that was sent out for getting this data could be made more simple.

There should be a column for the length of the school term.

Under "Recitation Periods," one space for length of recitation period will be sufficient. Each school had a uniform length of recitation for its own system.

"Study Periods," "Consultation Periods," "Undistributed Time at School" should be grouped under one head as "Required Time at School," in addition to recitation and laboratory work. In most of the reports these items were confused.

"Reading Students' Papers," "Definite Preparation of Specific Lessons," "Other Overtime" should be grouped under one head as "Overtime Outside of Regular School Hours."

A separate blank sheet should be sent to each school. In this case, a smaller sheet could be used. It would avoid delays in some schools that had to wait their turn for the big sheet which usually contained reports from four or five schools. In case a sheet is mislaid only one school would suffer.

OUTSIDE READING IN MODERN-LANGUAGE INSTRUCTION

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Experience of nearly ten years has convinced the writer that systematic outside reading connected with modern-language instruction is helpful and stimulating to pupils and that a communication outlining plan and results would be appreciated by teachers of modern languages.

In the German classes of the third and fourth years, in some cases in the second year, in the McKinley High School, books for outside reading are given to the pupils. There is no limitation of the time a pupil may keep a book. A minimum of four books a semester is required. If, however, the pupil reads more, a credit of 1 per cent for each additional book is allowed him.

While the home reading itself is a very important factor in the pupil's development, a still greater benefit is secured if he is required to relate the contents of such books to the teacher, either orally or in writing. This gives him additional opportunity to make practical use of the language he is striving to acquire. I have asked the third- and fourth-year classes to discuss in writing, freely and unreservedly, the matter of outside reading. One of these reports which shows sound judgment and is a frank statement of experience follows:

MY OPINION OF OUTSIDE READING

In the last two years of our German at the high school, we are required to do some outside reading. The reason I hated it so at first must have been either that I was too young to see into the matter correctly, or that it was new to me. At any rate, I know now that I shall never hate outside reading again. In glancing at the instructor's records of my readings from the last two years, I notice that I have read from two to three books more each semester; this indicates the increase of interest I have taken.

For a school library we have a considerable number of books from which to choose. Students differ in their selection of books. Some like the drama,

others romance, others history. There are enough books to satisfy their individual tastes. The instructor leaves the selection of books entirely to the pupil, unless he wishes to have some judgment passed on the book. I, for one, like the romances and historical accounts. My wish has always been well satisfied, and I have come to a point where I enjoy reading a German novel even better than an English one.

Such reports show plainly that the pupils themselves are convinced that outside reading does not mean a burden to them, but, quite the contrary, that it makes their work easier and more enjoyable. The same is true with regard to the work of the teacher. Of course, under the present plan we devote much time to the interests of the pupils. But it is clear, if outside reading improves the class work, if it stimulates the pupil's ambition and interest, if it helps him to overcome difficulties in grammar and construction, and if it makes him more self-reliant in the practical use of the language, then surely the teacher's work becomes also easier, gives him more enjoyment and satisfaction, and lifts his whole task to a higher plane. Will he not gladly devote some extra time to his pupils, if joy and enthusiasm, increased interest and sincere gratitude on the part of the pupils are his reward?

In accordance with the German principle: "Das Nützliche mit dem Angenehmen verbinden," I have endeavored to organize a small library which should contain not only useful books, but also interesting ones, books which the pupils would read with pleasure, and which at the same time could be classified as "gute Jugendliteratur."

I have been fully aware of the danger to which every teacher who selects books for his pupils is exposed; that is the danger of selecting what he likes, regardless of what pupils like. I have tried to avoid this danger, and have fully realized that making mistakes in that direction would mean a complete failure of the whole project. I need only call attention to the way in which textbooks for our regular class work are selected, many of them being unfit for young people, so few of them really appealing to their taste. In selecting books teachers are generally very careful to choose works of standard authors. This, of course, is perfectly correct, if the viewpoint of the pupil, his taste, and his capacity to grasp details, as well as the plot, are taken into proper consideration; but too often classics are chosen for which the pupils are too immature,

especially if we consider that they are studying a foreign language, to acquire which is in itself a task. Their work should not be made more difficult than it already is. We should never forget that in the high school the teaching of *language* is the main purpose and not the teaching of literature, at least not in a foreign language and not before the fourth year or the college grades. But, according to tradition, certain texts are read year after year—texts that cannot interest pupils, to whom often is done great wrong and far-reaching injustice as a consequence of this policy.

In building up my library, I have remembered the books I enjoyed myself in younger years, books which I should welcome as Christmas and birthday presents. In making selections for the girls, I recalled books which were favorites of my sister and her friends. With these books I started out, reading each one again before placing it in the hands of the pupils. Moreover, I have asked the different classes to make out lists of the books they have read and to indicate by letters or percentage figures, as customary on the report cards, the degree of their approval in regard to each book. Guided by these lists I have ordered more books, and of such authors as seemed to appeal mostly to their taste. From time to time I have introduced new authors and have frequently renewed the experiment. In this way I have finally succeeded in creating a library for outside reading which seems to satisfy the demand and the taste of the pupils. I am glad to mention the generosity and very efficient manner in which the St. Louis Public Library assisted me in carrying out my plans and has helped to arouse and maintain in so many of our high-school pupils a desire to read German books.

That these young people really enjoy reading such books, sometimes even in preference to English ones, may be seen in the following excerpts from the reports mentioned above:

"To supplementary German reading I owe a great deal of my real interest in the German language."

"The more German books one reads, the better he likes them. I like to read German books as well as English, and I have read more German ones in the last year than English ones in the last four years."

"Supplementary reading of German books carries with it many benefits. Chief among these is an enlargement of the student's vocabulary, which comes with much reading. Fluency of speech, one of the aims of every language

student, is acquired not only by reading, but also through telling the story to the instructor."

"The books are usually very interesting. This makes their reading a pleasant instead of a tiresome task. This seems to me at least a matter of great value, as it develops a true liking for the language."

Such advantages of outside reading as enlargement of the vocabulary, getting used to proper constructions, obtaining a better appreciation of German conditions, improvement of the pupils' geographical and historical knowledge, a more intimate acquaintance with the German people, all these things were brought out in the various essays. I do not need to reproduce such passages; but to point out some of the far-reaching and very gratifying effects of the outside method is not only my duty, but my pleasure.

Pupils who continued their language studies at the university have often told me that the outside reading in the high school has helped them much in their advanced work in literature courses and that they fully realized the advantage they have over students who did not have this training. Such authors as Goethe, Schiller, Grillparzer, Ludwig, Hebbel, C. F. Meyer, Gottfried Keller, Wildenbruch are represented especially in the library of the Senior class. The older pupils read these works with interest and in most cases with a certain, though naturally limited, comprehension.

Another very satisfying evidence of the good results of the outside reading practice was brought out in cases where pupils did not report on their books as promptly as I might have desired. On being asked what had happened to their books, they frequently told me that they had read them long ago and were ready to report, but would ask permission to keep the book a little longer, because father, mother, or sister was reading it also. In some cases father and son, or mother and daughter were reading the book together, thus causing a delay which, I found, was indeed very pardonable.

In order to treat the subject in a perfectly truthful manner I shall not pass over in silence the fact that two reports were unfavorable; one of these is partly, and the other one entirely, antagonistic. Both of them are, however, written by pupils in the third year, and there is consequently still hope for improvement. The great majority are fully in sympathy with the work. It is

with much satisfaction that I can report that some of the pupils have read as many as sixteen or eighteen books a semester, pupils who nevertheless are doing full justice to their duties in other departments, and who are known as being among the best students of the school.

A list of the books in my library follows:

GERMAN BOOKS

For Boys

Author	Title	Year
Brandstätter, H.	*Die Zaubergeige*	III
Bulwer, E. L.	*Die letzten Tage v. Pompeji*	III
Marryat, Kapt.	*Der fliegende Holländer*	III
" "	*Sigismund Rüstig*	III
May, K.	*Die Sklavenkarawane*	III
" "	*Der Schatz im Silbersee*	III
Nieman, A.	*Das Geheimnis der Mumie*	III or IV
" "	*Pieter Maritz*	III or IV
" "	*Flibustierbuch*	III or IV
Riehl, W. H.	*Der Fluch der Schönheit*	II
Schwab, S.	*Die Sagen Trojas*	III
Tanera, K.	*Das Erbe der Abencerragen*	III or IV
Wildenbruch, E.	*Das edle Blut*	II or III
" "	*Neid*	II or III
Wörishöffer, S.	*Onnen Visser*	III or IV
" "	*Kreuz und quer d. Indien*	III or IV
" "	*Die Diamanten d. Peruaners*	III or IV

For Girls

Hartner, E.	*Als Stütze d. Hausfrau*	III
" "	*Licht und Schatten*	III
" "	*Pension und Elternhaus*	III
Helm, C.	*Die Geschwister Leonard*	III or IV
" "	*Professorentöchter*	III or IV
" "	*Unsere Selekta*	III or IV
Marlitt, E.	*Goldelse*	IV
" "	*Geheimnis d. alten Mamsell*	IV
" "	*Reichsgräfin Gisela*	IV
" "	*Die zweite Frau*	IV
Niese, C.	*Das Dreigespann*	II or III
Schanz, F.	*Rottraut und Ilse*	III
Schulze-Smidt	*Mellas Studentenjahr*	III
" "	*Holde Siebzehn*	III or IV
Schroeder	*Rita*	III
Zobeltitz, E. v.	*Backfischkasten*	III or IV
" " "	*Heiratsjahr*	III or IV

For Boys or Girls

Author		Title	Year
Baumbach, R.	(Heath & Co.)	*Die Nonna*	II or III
Bernhard, W.	" " "	*Der Weg zum Glück*	II
Blüthgen, V.	" " "	*Das Peterle v. Nürnberg*	II
Goethe, Joh. W.	" " "	*Goetz v. Berlichingen*	IV
Grillparzer, F.		*Das Goldene Vliess*	IV
" "	(Holt & Co.)	*Die Ahnfrau*	IV
Hebbel, F.		*Die Nibelungen*	IV
" "	(Heath & Co.)	*Agnes Bernauer*	IV
Heyse, P.	(Holt & Co.)	*Die Blinden*	II or III
Ibsen, H.		*Ein Volksfeind*	IV
Keller, G.	(Heath & Co.)	*Kleider machen Leute*	III
" "	" " "	*Romeo und Julia a. d. Dorfe*	III
Lessing, G. E.		*Nathan d. Weise*	IV
Lohmeyer, J.		*Der Geissbub v. Engelberg*	II
Ludwig, O.		*Der Erbförster*	IV
Meyer, C. F.	(Heath & Co.)	*Jürg Jenatsch*	IV
Rosegger, P.	" " "	*Der Lex v. Gutenhag*	II
Schiller, F.		*Jungfrau v. Orleans*	III
" "		*Maria Stuart*	III or IV
" "		*Wallenstein*	IV
Storm, Th.	(Ginn & Co.	*Der Schimmelreiter*	III
Sudermann, H.		*Frau Sorge*	IV
Werner, E.		*St. Michael*	III
" "		*Gebannt u. erlöst*	III
" "		*Hexengold*	III or IV
" "		*Fata Morgana*	III or IV

FRENCH BOOKS

For Boys or Girls

About, E.		*Le Buste*	II
Ardel, H.		*Mon cousin Guy*	II or III
" "		*Rêve Blanc*	III
Enault, L.		*Le Chien du capitaine*	II
Erckmann-Chatrian		*L'Ami Fritz*	III or IV
Feuillet, O.	(William R. Jenkins)	*Le Roman d'un j. homme pauvre*	IV
Gennevraye, A.	" " "	*L'Ombra*	II or III
Julliot, Fr. de	" " "	*Mlle Solange*	III
Ohnet, G.	" " "	*Le Chant du cygne*	II
" "		*Le Maître de forge*	III
Malot, H.		*Sans famille*	II or III
Peyrebrune, G. de		*Les Frères Colombe*	II
Toudouze, G.		*Madame Lambelle*	III
Ventura, L. D.		*Peppino*	III
Verne, Jules		*Le Tour du monde*	III
Vervins, Comte de		*Deux artistes en voyage*	II

ON LEARNING TO STUDY: A FEW SUGGESTIONS

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Through my association with preparatory students and Freshmen the past several years, I have been strongly impressed with the fact that these young people have little or no idea of how to study. Nor is this ignorance limited to the lower classmen; their elder brothers too frequently manifest something of the same lack. Learning to read, as Carlyle puts it, is the chief business of the beginner and of the graduate in the university. In fact, when young people acquire the art of self-education, when they have truly learned to read or to study, they are then ready for their diplomas. The teacher can be of no greater service to the mental life of his students than to train and to inspire them to become independent of him. The teachers who can most easily accomplish this are doubtless the most efficient.

It might be well to observe that the processes of learning and teaching are largely the same. The difference is not so much one of kind as one of degree. The mental attitude of the learner should be such that he is both teacher and student. As far as the ability lies within him, he should undertake his assignment of study with the sole view not only of making it clear to himself, but also of making it a part of his mental equipment. As a rule, he will pass through practically the same steps in this process that he would in his endeavor to impart the same material to another. The main difference lies in the fact that as teacher his viewpoint should be vastly larger.

The negative side of learning and of teaching is largely the same. The weak points of one are the weak points of the other. Learning without plan is as ineffectual as teaching without plan. Cloudy, approximating notions on the part of the learner arrive at the same results as do similar notions in the mind of the teacher. In a lecture, Freeman, the well-known historian, aptly touched

the subject by saying, "The difference between good and bad teaching mainly consists in this, whether the words used are really clothed with a meaning or not." The same comment may be fittingly applied to learning.

The motive on the part of the student is as necessary as it is on the part of the teacher. It should be well-defined and genuine. There are students who are Blimbers, Gradgrinds, and Squeerses; who see just as little of the purpose of study and its value in the economy of life as did these celebrated schoolmasters with their distorted visions. Perhaps it will be years before the meaning of the opportunity of study dawns upon the student. Yet he is not a student until this revelation comes to him. He must experience his intellectual re-birth, or renaissance. Until he is intellectually introduced to himself, he may remain indefinitely in the college or university and yet not deserve to be designated a student. Until he can connect the matter in hand with life, can detect the relationship between the lifeless, listless statement of the printed page or the demonstration in the laboratory with human destiny, the name "student" should be held in abeyance. He must train himself to see the objects of his study bristling with suggestion and proposing in a highly thought-provoking manner problems with an intimate bearing upon the condition of real men and women.

In the preparation of a lesson there stand out rather saliently four guiding principles. These are not to be followed with the same deadening regularity with which some urge the Procrustean "five steps" of the recitation. They are modified and varied in accordance with the kind of lesson studied. Anyone readily appreciates that the student should really enjoy the preparation of a lesson in literature and that this enjoyment should be of a different kind from that stimulated in the preparation of a lesson in bacteriology, cement study, or in the comparative values of fertilizers. He should enjoy each, but in a different manner. Consequently, the principles involved in the preparation of diverse types of lessons will not receive the same emphasis.

First of all, a student should seek to *understand*. There is no superstructure without this foundation. "Understandest thou what thou readest?" is an old, but ever-pertinent question.

William Harvey comments on the idea in these words: "Those who, reading the words of authors, do not form sensible images of the things referred to, obtain no true ideas, but conceive false imaginations and inane phantasms."

The student should be encouraged to be honest with himself. He must be taught the habit of attempting to discriminate between what he knows, what he thinks he knows, and what he is sure he does not know. Such a mental attitude will be of great value to him. In one of his papers on higher education, the late President Harper deplored the lack of accuracy in the thinking of young people. Haziness of understanding leads to guessing and approximating, but not to clean-cut intellectual insight that will eventually be fruitful.

Life demands people who have formed habits of accuracy. In my judgment it is reckless pedagogy which tells a child that the answer to a problem is of little consequence as long as he has the principle. Inaccuracy on the part of the lawyer, the physician, the pharmacist, the train-dispatcher, is fatal. These men not only should be accurate but must be so. The social efficiency of the schools will never be enhanced by a spirit that allows and encourages the young people to acquire habits of carelessness and slovenliness in the workmanship done by either mind or hand.

The second step in studying is to *systematize* the material, or to give *proper relationship* to it. To illustrate: Everyone knows the difference between reading a solid, closely written page of history and reading a page properly paragraphed, with the paragraphs given a marginal heading. One page lacks perspective; the other clearly shows it. One shows what events stand out as primary and what follow as secondary; the other puts all facts and historic data on a par. It is imperative for the historian, whether he be teacher or writer, to set forth his subject in such an incisive and orderly manner that the reader easily and instantly sees what facts, what ethical laws, what sociological principles should be given prominence and what ones subordination.

So it is in studying a lesson. The true student is dissatisfied until he has brought order out of chaos and has given system and perspective to what at first seemed a somewhat unrelated mass of

facts. To do this is an extremely exacting business, yet one unusually rich in its mental reward. It is an exercise that tests the student's sense of relationship, proportion, and values. It cultivates in him decided habits of reflection. This will at once set him above his fellows who look upon studying and reciting as affairs of memory only.

After understanding and systematization comes *association*. In order to enrich his knowledge, the student should be taught to bring the newly acquired material into a large and vital relationship with other matter of a similar kind. If the assignment is *The Rime of the Ancient Mariner*, the teacher should not lose the opportunity of calling up other great "psalms of life," whose informing spirit is the music of charity. *The Vision of Sir Launfal, A Christmas Carol, Marsh Song at Sunset, My Triumph, Ten Times One Is Ten*, and many other compositions of kindred themes, when associated with Coleridge's famous *Rime*, form a cluster that will result in increased pleasure and profit to the youth. Again, when one reads Bryant's *The Poet*, one finds interest in recalling *Merlin, Saadi, A Vision of Poets, The Lady of Shalott, Popularity, A Musical Instrument*, all of which present the same informing idea. Then, there are the clusters of elegies, of nature-poems, of poetical expressions of the idea of pre-existence, and groups of other innumerable notions, which different poets have given their individualistic setting. The essay, the novel, the drama, the oration offer endless opportunities for building up vast resources by association.

In fields of work other than that of literature the possibilities for mental growth by association are no more limited. If the assignment is in the period of the Renaissance, one great book lover should recall another; Gutenberg's name should bring up Fust's; Rembrandt should suggest Rubens; Michelangelo, Titian, Correggio, Raphael should not be thought of as so many isolated names. The same principle likewise should be carried into questions of science. In fact, whatever the subject, the teacher should make the student see that knowledge without proper relationship to other knowledge is generally sterile and useless.

Last of all, there should be the *remembering*, or *appropriating*. After understanding, systematizing, associating, remembering

will not be an impossibility. The first three processes will easily pave the way. It is well enough in this day when teachers are absorbed with the notion of developing intelligence by so-called problem questions not to lose entire sight of the memory. A well-cultivated memory, made flexible through wide associations, is one of the best allies a student may have. History is rich in the names of men whose greatness may have been due in a measure to remarkable memories. Certainly one cannot say just what Gladstone, Disraeli, von Helmholtz, Scott, Macaulay, Coleridge, and others may have owed to the blessings of a good memory, nor would one be so unwise as to say that their work would have been equally prolific without this blessing. Possibly the popular advertisement is right in saying that one may have half the letters of the alphabet after his name and, because of his inability to remember, still remain a dunce. Let the intelligence-development lesson receive its proper credit, but no less let the memory have its share of attention. The world of affairs not only wishes men who can think, but it also wishes men who can remember.

Let the student, then, in his preparation of work feel the importance of understanding, systematizing, associating, and remembering, and he will soon find his mental efforts taking on a new interest and himself rapidly growing independent of his teachers.

RELATION OF RETARDATION TO ELIMINATION OF STUDENTS FROM THE HIGH SCHOOL

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The purpose of this study was to compare the class standings and progress through the grades of those who leave the high school before completing the course, with those who continue until graduation; to find, in other words, if there was a distinct qualitative difference between the pupils whom the high schools graduate and those whom they eliminate.

Other questions, phases of the main problem, are also considered. For instance: (1) How does the qualitative elimination of boys from the high school compare with that of the girls? A study is made of the different subjects taken by the pupils in high school in order to ascertain if one subject in the curriculum more than another influences elimination. A comparative study is also made of the age of entrance of the two groups, i.e., of the graduates and non-graduates, to ascertain how great an influence, if any, the age of entering the high school has upon elimination.

It is here assumed that the grades given to a pupil by his teacher constitute a measure of that pupil's ability to do the work which the school curriculum prescribes. Upon this assumption are based the qualitative comparisons made in this study.

DISTRIBUTION OF CLASSES AND STUDENTS

The investigation is based upon the records of 23 different high-school classes of the Iowa City High School. The classes taken were those entering the high school from September, 1897, to September, 1908, inclusive. There are two classes entered each year: one in September, at the beginning of the year; the other in January or February, at the beginning of the second semester.

The total number of pupils enrolled in these 23 classes was 1,042, of which 483, or 46 per cent, were boys and 559, or 54 per cent, were

girls. The boys exceeded the girls in nine classes, and the girls were in the majority in the other fourteen classes.

ELIMINATION BY GRADES

The total number of students enrolled as Freshmen in the 23 classes studied was 1,042; of this number 491, or 47 per cent, graduated and 551, or 53 per cent, dropped out before completing the course. In comparing the graduates and non-graduates as to number, we find there are 60, or 6 per cent, more eliminated than remain to complete the course. The number of students who dropped out was found to be the largest during the first semester and to decrease from grade to grade through the four years of the high school. The distribution is given in Table I.

TABLE I

SHOWING DISTRIBUTION OF PUPILS ELIMINATED FROM THE HIGH SCHOOL DURING EACH SEMESTER OF THE FOUR-YEAR COURSE

Elimination based, not on the length of time in school, but on the different grades of the course during which the pupils dropped out.

	Total Entered	Freshman		Sophomore		Junior		Senior		Total
		1st Sem.	2d Sem.	1st Sem.	2d Sem.	1st Sem.	2d Sem.	1st Sem.	2d Sem.	
Boys	483	91	54	46	24	20	17	6	8	266
Girls	559	77	61	54	41	19	15	11	7	285
Combined	1,042	168	115	100	65	39	32	17	15	551

TABLE II

SHOWING THE DISTRIBUTION OF ELIMINATION BY PERCENTAGE DURING THE DIFFERENT SEMESTERS THROUGHOUT THE FOUR YEARS OF THE HIGH SCHOOL

	Total Percentage Entered	Freshman		Sophomore		Junior		Senior		Total
		1st Sem.	2d Sem.	1st Sem.	2d Sem.	1st Sem.	2d Sem.	1st Sem.	2d Sem.	
Boys	100	18.84	11.18	9.52	4.97	4.14	3.52	1.24	1.66	55.07
Girls	100	13.78	10.91	9.66	7.33	3.40	2.68	1.97	1.25	50.98
Combined	100	16.12	11.04	9.60	6.24	3.74	3.07	1.63	1.44	52.88

In comparing the sexes, we find that the elimination of the boys is greater than the elimination of the girls, the former being 55 per cent and the latter 51 per cent of the total enrolment in each case.

The first year is the most critical one for both boys and girls. Of the 266 boys who dropped out, 145, or 55 per cent, were eliminated during the first year. Of the 285 girls who were eliminated during the four years, 138, or 48 per cent, dropped out during the first year. Combining the boys and girls, we find that 283 of the 551 eliminated, or 51 per cent, were eliminated during the first year.

PASSING GRADES AND FAILURE DISTRIBUTION

The distribution of the passing grades and failures made by the 1,042 pupils studied was as follows: the 483 boys made 9,478 passing grades and 1,212 failures; the 559 girls made 11,774 passing grades and 1,389 failures, making a total of 21,252 passing grades and 2,601 failures made by the total enrolment. This is an approximate average of 8 passing grades to 1 failure for all pupils enrolled in the 23 classes.

In answer to the question, "How do pupils who leave the high school before completing the course compare in class standing with those who continue until graduation?" we have but to look over the results in Table III. From this we get a comparison between the graduates and non-graduates as to the relative percentage of failures in each group.

The graduates made a total of 16,474 passing grades and 1,037 failures, an average of 33.55 passing grades and 2.11 failures for each of the 491 pupils who graduated. This is an average of 15.88 passing grades for each failure made. The non-graduates made a total of 4,778 passing grades and 1,564 failures, an average of 8.67 passing grades and 2.84 failures for each of the 551 pupils who were eliminated. This is an average of 3.05 passing grades for each failure made. The total number of passing grades made for each failure made is approximately five times as great for the graduates as for the non-graduates.

The number of pupils who made no failures was 421, or 40 per cent of the total enrolment, leaving 621, or 60 per cent of the total enrolment, who made one or more failures. Of the graduating group, we find 215, or 44 per cent, who made no failures, and of the non-graduating group, 206, or 37 per cent, who made no failures.

There is approximately 6 per cent more of the graduates who made no failures than non-graduates; however, there were 74 who did not remain long enough to make any semester grades or failures. Many of these failed in their monthly examination and in all probability would have failed in their semester examinations. It seems only fair to separate these from the others when estimating the per cent of non-graduates who made no failures. If we eliminate these 74, we would have 132, or 28 per cent, who made no failures. There are then, approximately 16 per cent more graduates than non-graduates who made no failures.

TABLE III

PASSING GRADES AND FAILURE DISTRIBUTION BY SUBJECTS

SUBJECT	GRADUATES		NON-GRADUATES	
	Passing Grades	Failures	Passing Grades	Failures
English	2,110	125	1,011	316
Literature	1,313	65	107	38
Eng. grammar	378	22	38	10
Argumentation	8	0	1	0
Algebra	1,459	190	681	308
Geometry	1,257	122	249	131
Arithmetic	294	12	51	19
History	2,102	125	711	255
Civics	329	12	21	5
Economics	281	2	14	5
Com. geography	295	11	115	25
Latin	2,130	196	563	272
German	1,137	43	134	14
Physiology	188	7	105	18
Botany	300	2	110	16
Zoölogy	184	10	125	29
Chemistry	200	3	19	5
Physics	895	74	75	29
Man. training	487	8	191	14
Reviews	72	0	3	0
Sewing	72	2	6	0
Bookkeeping	162	4	72	5
Drawing	761	2	374	20
Music	60	0	1	0
Total	16,474	1,037	4,778	1,564

In Table III are listed the subjects studied and the total number of passing grades and failures made by the 1,042 pupils studied. The distribution is made for the two groups, graduates and non-graduates.

In order to discover if one subject more than another seems to influence elimination, we may make a comparative study through Tables III and IV. From these tables we may get the relative amount of failures in each subject as made by the different groups,

TABLE IV

SHOWING THE NUMBER OF PASSING GRADES MADE FOR EACH FAILURE BY BOTH THE GRADUATES AND THE NON-GRADUATES AND THE DIFFERENCE BETWEEN THE TWO IN THE NUMBER MADE

The percentage of failure of the number of the semester hours of work attempted is given for both the graduates and the non-graduates, also the difference between the amounts of the two groups.

	NUMBER OF PASSING GRADES MADE FOR EACH FAILURE			PERCENTAGE OF FAILURES MADE OF SEMESTER HOURS' WORK ATTEMPTED		
	Graduate	Non-Grad.	Difference	Graduate	Non-Grad.	Difference
English	16.88	3.20	12.68	5.59	23.81	18.22
Literature	20.20	2.82	17.38	4.72	26.81	21.49
Eng. grammar	17.18	3.80	13.38	5.50	20.42	14.92
Algebra	7.68	2.21	5.47	11.52	31.14	19.62
Geometry	10.30	1.90	8.40	8.85	34.47	25.62
Arithmetic	24.50	2.68	21.82	3.92	27.14	23.22
History	16.80	2.79	14.01	5.61	26.40	20.79
Civics	27.41	4.20	23.21	3.52	19.23	15.71
Economics	140.50	7.00	133.50	.71	12.50	11.79
Com. geography	26.82	4.60	22.22	3.59	17.86	14.27
Latin	10.86	2.07	8.78	8.43	32.57	24.14
German	26.44	3.05	23.39	3.64	24.72	21.08
Physiology	26.86	5.83	21.03	3.59	14.63	11.04
Botany	150.00	6.88	143.12	.66	12.70	12.04
Zoölogy	18.40	4.31	14.09	5.15	18.83	13.68
Chemistry	66.67	3.80	62.87	1.48	20.83	19.35
Physics	12.09	2.59	9.50	9.01	27.88	18.87
Man. training	60.88	13.64	47.24	1.62	6.83	5.21
Bookkeeping	40.50	14.40	26.10	2.41	6.49	2.08
Drawing	380.50	18.50	362.00	.26	5.08	4.82

graduates and non-graduates. We find that in three of the subjects—argumentation, music, and reviews—there are no failures recorded. So far as I was able to get any information about these subjects, the pupils received grades in the first two of those after they had completed a satisfactory amount of work, but if they failed to complete the required amount of work no record was made of the fact as a failure or otherwise. The subject "reviews" was nearly always given during the last semester of the Senior year,

and only when the pupil had been doing satisfactory work. Another subject, that of sewing, should also be noticed. It was usually given during the Senior year, and there are scarcely enough cases to make the results of a comparative study of the graduates and non-graduates reliable, because only a few of the non-graduates remain in school long enough to qualify as Seniors. Several other subjects seem to be of little value for making a comparative study, as there are so few grades. These subjects are grammar, arithmetic, civics, economics, chemistry, physics, and bookkeeping.

I find in comparing passing grades and failures made by those who graduated and by those who dropped out before completing the four-year course, that the graduates made a greater number of passing grades for every failure made in every subject with one exception, i.e., sewing. The non-graduates made 6 passing grades and no failures in this subject. The percentage of failures made by the two groups was less for the graduates with this one exception. The highest percentage of failure made by the non-graduates was 35 per cent, while the highest made by the graduates was 12 per cent. The average percentage of failure in the different subjects was 5 per cent for the graduates and 21 per cent for the non-graduates. The average percentage for the non-graduates was 16 per cent greater than the average for the graduates. The highest percentage of failure in any subject by the graduates was 12 per cent (in Latin), which was 9 per cent less than the average of the non-graduates in all subjects. The percentage of failure was about three to four times as great for the non-graduates as for the graduates. In a few subjects the difference is far greater than this; for example, in chemistry the percentage of failure is 14 times as great for the non-graduates as for the graduates; in economics the percentage of failure is 18 times as great for the former as for the latter; in botany, 19 times as great; and in drawing, almost 20 times as great for the former as for the latter. In two of these subjects there were so few of the non-graduate group who registered for the courses that the results do not have much significance. The two subjects referred to are economics and chemistry. In the latter subject there were 24 semester hours and in the former only 19 semester hours registered for by the pupils of the non-graduate

group. In the subject of drawing, the percentage of failure was so low in both cases that the comparison is of relatively little value. The percentage of failure was approximately 5 per cent for the non-graduates and $\frac{1}{4}$ of 1 per cent for the graduates.

After making a comparative study of the grades and failures made by the graduates and non-graduates one is led to believe that there is a distinct qualitative difference between the pupils whom the high schools graduate and those whom they eliminate. Not only is the difference noticeable when we compare the total number of passing grades and failures made by the different groups, but the difference is found to exist practically throughout all the courses of the curriculum.

COMPARATIVE STUDY OF THE DIFFICULTY OF THE SUBJECTS OF THE CURRICULUM

Is one subject of the curriculum more difficult than another for the high-school student? We may answer this question by making an analysis of Table V, the result of which seems to answer the question in the affirmative.

In comparing the percentage of failures in the different subjects by the whole body of students, without dividing them into graduates and non-graduates, we get the results indicated in Table V. This table shows the comparative difficulty of the different subjects as judged from the results of this particular group of students.

Algebra is the most difficult subject for the high-school pupils. In this subject they failed in almost 19 per cent of the semester hours of work attempted. The next hardest subject was Latin, geometry ranking almost as difficult.

COMPARATIVE STANDING OF THE TWO GROUPS

The specific problem is concerned with the relative standing of the pupils in the two different groups, the group that graduated and the group that was eliminated, as indicated by their marks and passing grades. In answer to the question, "Is there a distinct qualitative difference between the pupils whom the high schools graduate and those whom they eliminate?" I have already shown

in a previous section that there is a distinct difference in the percentage of failures made by the two groups, but have not shown whether this is offset by a relatively large percentage of high marks.

TABLE V

SHOWING THE NUMBER OF PASSING GRADES AND FAILURES MADE IN EACH SUBJECT BY THE 1,042 PUPILS STUDIED

The average number of passing grades for each failure is shown and the per cent of failures in each subject.

	Passing Grades	Failure	Number of Passing Grades for Each Failure	Per Cent
English	3,121	441	7.09	12.38
Literature	1,420	103	13.79	6.76
Eng. grammar	416	32	13.00	7.14
Argumentation	9	0	.....	.....
Algebra	2,140	498	4.30	18.88
Geometry	1,506	253	5.95	14.38
Arithmetic	345	31	11.13	8.24
History	2,813	380	7.40	12.21
Civics	350	17	20.59	4.63
Economics	295	7	42.14	2.32
Com. geography	410	36	11.39	8.07
Latin	2,693	488	5.75	14.81
German	1,271	87	14.61	6.41
Physiology	294	25	11.76	7.84
Botany	410	18	22.78	4.21
Zoölogy	309	39	7.92	11.21
Chemistry	219	8	27.38	3.52
Physics	970	103	9.42	11.88
Man. training	678	32	21.13	4.51
Reviews	75	0	.....	.....
Sewing	78	2	39.00	2.50
Bookkeeping	234	9	26.00	3.70
Drawing	1,135	22	51.59	1.90
Music	61	0	.....	.....

The standing of the pupils is indicated by the letters for the different degrees of efficiency as judged by the teachers from the class-work and examination. The following letters were used to denote the standing of the pupils: E, excellent; G, good; M, medium; P, poor; F, failure.

A study of Table VII shows that the percentage of failures is approximately four times as great for the non-graduates as for the graduates; that the percentage of poor grades is about 50 per cent greater for the non-graduates than for the graduates; the percentage of medium grades is approximately the same in both groups;

the percentage of good grades is more than 50 per cent greater for the graduates than for the non-graduates; and the percentage of excellent grades is approximately twice as great for the graduates as for the non-graduates. I found that the graduates had approximately 61 per cent of their grades above the medium grade, as compared with 37 per cent above the medium grade made by the non-graduates; and that 13 per cent of their grades were below the medium grades, while the non-graduates had 36 per cent of their

TABLE VI

SHOWING THE DISTRIBUTION OF GRADES RECEIVED BY THE TWO DIFFERENT GROUPS

	Excellent	Good	Medium	Poor	Failure
Graduates	2,121	8,464	4,540	1,272	1,037
Non-graduates	370	1,961	1,726	720	1,564

TABLE VII

SHOWING THE PERCENTAGE OF THE DIFFERENT GRADES RECEIVED BY THE TWO DIFFERENT GROUPS

	Excellent	Good	Medium	Poor	Failure
Graduates	12	49	26	7	6
Non-graduates	6	31	27	11	25

grades below medium. The percentage of medium grades made by the two groups was approximately the same, and the qualitative difference between the two groups is found in the percentage of grades which lie above and below the medium group. The larger percentage of the grades which the non-graduates have above the graduates in the lower grades is found to be shifted up the scale, not to the medium group, but on up to the two higher groups, thus showing a clear qualitative difference in favor of the graduate group.

AGE AND ELIMINATION

In making a study of the ages of the students entering the high school, I have not only distributed them according to the age of entering, but I have separated the students into two main groups, the graduates and the non-graduates; and under each of these

divisions I have made a further division, dividing each group according to sex.

Assuming that six years is the normal age for the child to enter school, and allowing eight years for the completion of the elementary and grammar-grade work, we have fourteen years as the normal age for entering the high school.

Taking fourteen, then, as the normal age for entering the high school, I found that 19 per cent of those entering were below normal, 35 per cent of normal age, and 46 per cent were above normal age.

TABLE VIII

AGE DISTRIBUTION

This table shows the age distribution of the graduates and non-graduates, the age distribution of boys and girls under each division, and the combined age distribution of all pupils at the time of entering the high school.

AGE	GRADUATES			NON-GRADUATES			COMBINED		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
11	0	0	0	0	1	1	0	1	1
12	10	9	19	5	2	7	15	11	26
13	49	62	111	25	28	53	74	90	164
14	89	120	209	71	86	157	160	206	366
15	42	65	107	65	85	150	107	150	257
16	15	17	32	64	57	121	79	74	153
17	12	1	13	26	16	42	38	17	55
18	.....	.....	.....	2	5	7	2	5	7
19	.....	.....	.....	1	1	2	1	1	2
20	.....	.....	.....	2	.....	2	2	.....	2
	217	274	491	261	281	542	478	555	1,033

Table VIII gives the number entering at any given age. Comparing the age distribution of the boys and girls, I found 19 per cent of the boys below normal age, 33 per cent of normal age, and 48 per cent above normal age. Of the girls, 18 per cent were below the normal age, 37 per cent of normal age, and 45 per cent above normal age. There were more boys by 3 per cent than girls above the normal age. The average age of the graduates was 14.12 and of the non-graduates 14.92 years.

So far as age alone is concerned, the pupils who enter the high school below the normal age have a higher expectancy of completing the course than those who are above the normal age. The least

percentage of elimination is found in the twelve-year-old group, and the percentage of elimination increases with the increase of the age of each group with the exception of the seventeen-year-old group of boys. In that group the percentage of elimination falls much below the percentage of elimination of the sixteen-year-old group.

There is a very marked increase in the percentage of elimination, between the fifteen-year-old group and the sixteen-year-old group, a difference of approximately 20 per cent.

Of the non-graduates 5 boys and 4 girls did not give their ages.

Table IX shows that considerably over half were eliminated of all those who entered high school above the normal age. Of the age groups ranging from fifteen to seventeen inclusive, we note

TABLE IX

PERCENTAGE OF DIFFERENT AGES ELIMINATED

Age	Boys	Girls	Combined
12	33	18	27
13	34	31	32
14	44	42	43
15	61	57	58
16	81	77	79
17	68	94	76

that from 58 per cent to 79 per cent were eliminated, with a total elimination of 68 per cent of all those who entered above fourteen years of age. Of the age groups below fourteen, only 32 per cent were eliminated and 68 per cent were retained. Of the pupils entering at normal ages I found 58 per cent were retained and 42 per cent were eliminated. Comparing those entering the high school below normal age with those entering above normal age, I found 68 per cent of the former were retained, while only 32 per cent of the latter were retained. The elimination was only 32 per cent of the former group, while 68 per cent of the latter group dropped out before completing the four-year high-school course.

Large numbers of the older pupils dropped out to go to work, many were attracted to the short courses of the "business colleges," and some entered the universities and colleges as unclassified students, taking courses which appealed to them.

A COURSE IN GENERAL SCIENCE FOR HIGH SCHOOLS TO BE USED AS AN INTRODUCTION TO AGRICULTURE, DOMESTIC SCIENCE, AND OTHER SCIENCE COURSES

This course was adopted by the Agricultural Section of the High-School Conference which met at the University of Illinois, November 20–22, 1913. It was presented by Professor W. L. Eikenberry of the University of Chicago High School, who has used the course for four years. A. C. Norris, Rockford, Illinois, and A. W. Nolan, Urbana, were chairman and secretary of the section. These gentlemen would be glad to receive comments on the course from all interested.

Part I. The Air and Our Relation to It

I. Some physical characteristics of the air.
   A consideration of the more obvious physical properties of air, such as weight, pressure, compressibility, expansion by heat.

II. Temperature changes and the seasons.
   Relation of changes in air temperature to length of daylight and inclination of sun's rays. Human interests in seasons.

III. The water of the air.
   Humidity of atmosphere, humidity in homes, schools, and out-of-doors, condensation of water, dew, clouds, rain, etc.

IV. Weather.
   Weather of temperate zone, weather maps, weather bureau, interpretation of atmospheric phenomena.

V. Composition of air.
   Questions arising in the preceding chapter lead up to consideration of the molecular theory in simple form.

VI. Composition of air.
   A simple discussion of the fundamental ideas of chemical action. Based upon a laboratory study of combustion.

VII. Relation of the air to chlorophyll work.
   The origin of carbohydrates and the relation of the process to the atmosphere. Fundamental importance to all living things.

VIII. Dust, molds, and bacteria of the air.
   Starting from the dust constituents of the air, some consideration of bacteria and their relation to decay, disease, agriculture, and industry. Culture method used principally.

IX. Flying insects as distributors of bacteria.
Considers the house fly principally, but notions received are applied to general problems of relation of insects to disease.

Part II. Water and Its Uses

X. Ice, water, and steam.
A discussion and laboratory study of the three states of matter; their practical applications.

XI. Water pressures, buoyancy, and density.
Laboratory study of the topics; discussions of their applications.

XII. Climatic influences.
The specific case of the influence of the Great Lakes upon climate in the surrounding area, using data from Lake Michigan. The principles developed are related to the larger problem of oceanic influences.

XIII. Commercial relations.
The commercial importance of great bodies of water and the control of human activities thereby.

XIV. Water supply and sewage disposal.
These problems are related to the preceding studies of water, and of bacteria, and their importance in both city and country is developed.

Part III. Work and Energy

XV. Work by running water.
Ideas of work, both mechanical and physiographic, are developed by reference to the work of running water.

XVI. Work and machines.
An introduction to the ideas of work through the agency of a simple machine—the pulley—and other machines.

XVII. Energy and its transformation.
Proceeds from ideas of work to those of energy, and the transformation of mechanical energy into heat.

XVIII. The sun as a source of energy.
The sun is considered as an immediate source of energy for certain purposes, as photosynthesis, and as the ultimate source of energy.

XIX. Energy for plants and animals.
Respiration, considered as an energy-giving process.

Part IV. The Earth's Crust

XX. Effect of natural forces upon the earth's crust.
Introductory.

XXI. Structure and composition of the soil.
Sand, gravel, clay, and humus as constituents of the soil.

XXII. Origin of the soil.
Includes weathering, glaciation, etc.

XXIII. Soil water, drainage, and irrigation.
Considered in relation to agriculture.

XXIV. Erosion and sedimentation.
Their effect upon soils.

XXV. Life in the soil.

Part V. Life on the Earth

XXVI. The plant covering of the earth.
The natural vegetation of the earth and its importance to men.

XXVII. Absorption from the soil by plants.
The method and structures of absorption, and the materials absorbed.

XXVIII. The world's food supply.
Consideration of the manufacture of food in the plant, the importance of this manufacture to man, and the great industries founded upon it.

XXIX. Utilization of food in the plant.
Digestion, transference, storage, and assimilation.

XXX. The nutrition of animals.
The ideas of digestion, assimilation, etc., from preceding chapter are applied to the more complicated problem of animal and human nutrition.

XXXI. Classification of animals and plants.
A brief account of the principal groups of living things.

XXXII. Reproduction in plants and animals.
Some illustrations of how new organisms come into existence.

XXXIII. The struggle for existence.
Illustrations from both natural and agricultural situations.

XXXIV. Parents and offspring.
An elementary discussion of variation and heredity in their practical aspects. Plant and animal breeding. Importance of human heredity.

EDUCATIONAL NEWS AND EDITORIAL COMMENT

College Work in the High School

San Diego, California, has followed the lead of several other cities in that state by adding to the high-school curriculum two years of college work. This "junior college" in no way interferes with the regular four-year high-school course; it merely provides the opportunity for graduates to do at home the first two years of advanced study. After finishing with credit the junior college, a pupil will be accepted as a Junior in Leland Stanford Junior University, in the University of California, and in most of the other higher institutions.

In recommending this innovation to the Board of Education, Superintendent Duncan MacKinnon sets forth its advantages under four heads.

1. For financial and other reasons, many high-school graduates are unable to continue their studies away from home.

2. The child can be kept for two years more under the influence of the home.

3. The influence of this opportunity will spur on many students to continue study who might otherwise stop.

4. Both Leland Stanford Junior and California have intimated that their elementary classes will be discontinued as soon as local conditions permit such work to be done in the high schools of the state.

It has long been recognized that the first two college years are in reality a continuation of the secondary school. With little variation, the almost universal program of the Freshman year includes English, modern languages, algebra, science, and history. The Sophomore year is not materially different. Moreover, the instruction is, or rather ought to be, in these two college years, the same intimate and carefully supervised work that is prevalent in secondary schools. Provided, then, that competent teachers are secured, there seems to be no reason why the pupil cannot remain at home for this added work.

And the securing of competent teachers is less likely to seem difficult when one considers that much of the elementary college work in large institutions at least is left in the hands of inexperienced instructors and assistants. Large lecture classes are met by the professors; and small quiz sections, in which alone is possible the personal touch with the students, are put in the hands of a subordinate. High-school teachers

of long experience are more likely to be better fitted to teach the average college Freshman than are the college instructors to whose mercies he usually is turned over. Superintendent MacKinnon asserts, "Many of the high-school teachers in San Diego are capable of doing the work of college grade."

This change is in line also with the best practice in the schools of Germany and France. The lad who finishes the *Gymnasium* is ready to be compared with our college Junior in advancement. This is as it should be. There is little or no reason for including senior-college and junior-college work under the same roof. The very name "higher institution" ought to signify that the work undertaken is of more difficult character. Just as we are coming to think that the proper division between the lower and the secondary school is at the end of the sixth grade, on the ground that the seventh and eighth grades are similar in nature to the high-school grades, so it is consistent to make the separating point of secondary and higher education at the sixth year of the high school.

The suggestion that the University of California and Leland Stanford Junior University have intimated that they may some day drop the first two years is not to be taken very seriously. It will be many long years, if ever, before the large majority of towns and cities can afford to establish the junior college. In all probability the expense, not prohibitive for San Diego, will be too heavy for smaller towns. A high school of one thousand pupils might have fifty Freshmen and thirty Sophomores in the junior college. These pupils would require at least five additional instructors more highly paid than the ordinary run of high-school teachers. To be sure this added expense to the local community might be met in some other way. We shall be surprised if there is not a movement in many states to withhold some of the subsidy now lavished on state institutions, and to divert it into channels of state aid for those towns which feel that with such help they can establish junior colleges.

State Commissioner Supreme

The Court of Appeals of the state of New York has recently made a ruling which makes the State Commissioner of Education supreme in educational matters of that state. He is made the ultimate authority in disputed matters arising in the system of New York City.

The decision arose in this way. The Board of Education and Superintendent Maxwell differed as to the interpretation of the right

of certain teachers to be on the eligible lists for promotion. Prior to 1902 licenses known as No. 1 and No. 2 were issued which entitled the holders to be placed on the promotion lists. Since that time additional by-laws have been adopted upon the subject of promotion which render ineligible the holders of these particular certificates. Nevertheless, the Board of Education, disregarding these by-laws, placed on the eligible list approximately 3,000 persons holding these old licenses. Superintendent Maxwell insisted that such an order would greatly impair the efficiency of the teaching force. When, therefore, he was ordered by the Board to place these names on the list, Mr. Maxwell took an appeal to State Commissioner Finley. Thereupon the Board through the corporation counsel sued out before the Court of Appeals a writ of prohibition against this hearing. The writ has now been denied, and the hearing will be held before the Commissioner.

Justice Hiscock, who wrote the opinion in which all the judges concur, says that he is not "prepared to admit that his [the Commissioner's] decision will not be binding and conclusive on all parties to this proceeding. By the terms of the statute it is made so, and I suppose that the legislature may provide that it shall be thus conclusive and binding on all of the agencies of the state."

It would seem that the effect of the decision will be very far reaching, in fact making one man the arbiter and dictator in all public educational affairs in the whole state. While the state of New York might rest content to have such a single dictator in the person of a man like Commissioner Finley, it is not difficult to think of certain other states, and other educational heads, in which the concentration of power would not be so fortunate.

The Opportunity of a Physical Director

The old idea of physical training maintains that its sole purpose is to strengthen the body, to develop skill and grace by fancy dancing and light calisthenics, and to secure muscular development by indian clubs, dumb-bells, apparatus work, and games.

However, a physical director may be "A No. 1," so far as his ability to coach athletic teams and to lead classes is concerned, and yet be a failure in his true work. To say that mental development is closely related to physical is a truism. A boy's mental efficiency is reduced by adenoids, diseased tonsils, weak eyes, etc. These and other defects at once depress his scholastic standing. Parents are seldom aware of these defects; and those who are aware of them do not realize their importance

in affecting the boy's mental ability. To diagnose such cases and to give proper advice—this is a far more important duty of a physical director who understands his business than is coaching athletic teams or leading dumb-bell squads.

A still more important field of usefulness is the opportunity of the competent director to reach boys who unwittingly do themselves great harm. This he does by means of simple talks on hygiene and personal purity. Gymnasium talks are found very helpful. It has been found that in classes of thirty boys as many as three or four are ready to admit that they have been warned and helped. An average of one boy in such a class will come to the director for advice. Besides these general lectures a keen-sighted director can find many occasions when a boy is just ready for advice in the nature of a talk on his general attitude toward life.

In the J. Sterling Morton High School a system called the "Out Club" makes it possible for the physical director to talk to the boys with good effect. If a lad is behind in any of his studies his name is posted. This excludes him from gymnasium after school hours and also from any outdoor sports. When a boy is in the Out Club we find out if there is any good reason for this, then we try to make him see that it is to his advantage to keep up in his studies. We usually appeal to him from an athletic standpoint or through the fact that he is kept away from the other fellows by having low grades. In this and in all our methods we have in view more men for athletics, better scholastic standing, better general health, and excellent personal habits. These purposes are mentioned in the order of importance, as they ought to be emphasized by a competent department of physical training.

H. L. BRUNDAGE

CICERO, ILLINOIS

INFORMATION PAMPHLETS OF THE SIOUX CITY HIGH SCHOOL

Superintendent M. J. Clark, of Sioux City, Iowa, is issuing a series of "information pamphlets" for the purpose of imparting information to the young people of the city about the various lines of activity possible in the high school. Pamphlet No. I describes the commercial courses; Pamphlet No. II, the extension music courses; a third pamphlet now under way will be entitled "College Preparation Courses." Three or four or more of a similar character are contemplated. These little bulletins, neat and trim, are designed, set up, and printed in the high-school printing-shop. The idea of issuing this information in pamphlet

form is itself worthy of comment. More commendable, however, is the plan of courses which the pamphlets set forth. Pamphlet No. I gives the outline of the commercial course as follows:

I. *Short Courses:*

While only the complete four years' graduation course can give the well-rounded training and education that a business man or woman needs, the Board of Education recognizes that many pupils cannot find the time for a full four years of work. They have, therefore, arranged one-, two-, and three-year certificate courses.

These courses have been so arranged that pupils may change to the longer course or the complete four-year course without much loss of time. It is recommended, however, that pupils enter for the complete course whenever possible, as the arrangement of materials can be much better adjusted for those who so enter.

II. *Note These Things:*

1. The one-year course is aimed to be of benefit to those pupils who cannot spend more than one year in the high school. It endeavors to give some things that have been found useful to everyone. It makes no pretense of turning out expert bookkeepers but it does give the elements of bookkeeping and its closely allied branches.

2. The two-year courses offer a thorough drill in the technique of either bookkeeping or shorthand. They offer in addition as much other pertinent matter as the time will permit.

3. The three-year courses should appeal especially to those who can see the many possibilities that a training in this double line presents. The beginner in business life finds a heartier welcome if he knows both bookkeeping and shorthand.

4. The graduate of the four-year course though, more than any other, is the one sought by business men. He or she has the choice of the vacancies.

III. *Partial Courses:*

In connection with other courses offered by the high school, pupils may carry for not less than a year in the commercial department any one of the following subjects: typewriting, bookkeeping, general science, or they may carry shorthand for two years, or penmanship for one-half year; no credit will be given for less than the above units, and credit in penmanship is dependent upon ability to write legibly and with correct movement and speed. No credit toward graduation will be given for less than the above amount of work.

While only one semester of penmanship receives credit, all pupils in the commercial department are required to take this work until their writing is satisfactory.

The highly suggestive fact in this series of short courses is that each one leads directly into the next higher one. A pupil can enter for any one of these courses, change his mind, and remain for the four years' course without loss of effort.

Pamphlet No. II outlines a liberal plan for correlating the study of music outside of school with the regular school work. In Sioux City one credit each semester may be applied upon the thirty credits required for graduation, but the pupils working for music credit are allowed to carry only three other studies, thus making the regular four-unit course for the year. The required work specifies one lesson of sixty minutes per week and practice of one hundred and twenty minutes a day, six days in the week; credit is not allowed for less than a full year's work. Various teachers of music throughout the city are accredited, but the pupil electing music is not passed upon the recommendation of his instructor. His credit is given only after special examinations by the school authorities. Three general courses, in pianoforte, violin, and organ study, are offered.

Physical Exercise of College Students

Dr. H. S. Wingert, director of physical education at Ohio State University, reports that the majority of students attending American colleges do not take the physical exercise necessary to keep their bodies in a healthful condition. Of 111,600 students in 150 institutions, only 18,359 participate in the athletic games, while in non-'varsity games 45,378 men take part. On the sports not played under the direction of college, only $71,000 is spent annually.

Out of 143 colleges taking part in inter-collegiate sports, 37 per cent take no interest in fostering any type of physical exercise, the report says. Fifty-one per cent try to create love for sport by promoting foot-ball, baseball, basket-ball, and other games. Twenty-one per cent give corrective exercises; 14 per cent hygienic lectures; 5 per cent require swimming and 2 per cent teach dancing. Dr. Wingert's investigation is part of the program being carried on by colleges to have all students participate in some form of athletic exercise.

COMMUNICATIONS

To the Editor:

In regard to the attack of Superintendent Morrison upon the New England College Entrance Certificate Board, commented upon in the April *School Review*, the following facts are of interest. This is not a defense (fair-minded school men do not think the Board needs one), nor is it official, although the writer was a substitute member last year, when the action was taken which arouses Mr. Morrison's wrath.

Mr. Morrison stated that if one out of a hundred pupils certificated to college failed, privileges would be withdrawn. They would not be withdrawn. He says the Dover High School was "summarily dropped," yet it received a just warning in 1911 for three failures, a second in 1912 for five failures, and was dropped in 1913 for total failure of four of thirteen pupils certificated, and for course failures in five of the seven subjects certificated and continued in college.

He complains that the Board is autocratic, yet in 1912 and 1913, 97 per cent of the schools applying for the use of the certificate privilege were granted it; 460 schools were approved and 11 were refused—evidently the Dover High School has few companions.

Mr. Morrison would have this Board "responsible to the states." Should not the states then pay the bills of the colleges concerned? Maine pays over $160,000 a year for its state university, which Mr. Morrison praises; eleven of the colleges on the Board do not receive a cent of state aid.

Poor college instruction in the Freshman year is the cause of students' failures, again explains the New Hampshire superintendent. Perhaps in part; is it worse than the average instruction in high school? At Bowdoin half the Freshman faculty has had experience in high-school teaching and the average length of their college teaching is fourteen years.

He lauds the University of Maine (which is doing splendid service to the state) for receiving practically any graduate of a high school. Maine high-school principals are not fully convinced that the boy who receives their diploma is thereby shown to be proper college material. In Maine many high schools are grateful for the high demands of certain of these "autocratic" colleges, because they serve to raise and maintain real standards in the secondary schools.

The new courses in the New Hampshire high schools, largely the result of Mr. Morrison's changes, deserve praise as forerunners and guides for other secondary schools. One college at least (Bowdoin) is striving now to find a place in its halls for a boy prepared in such a true "people's college."

College and school must unite; no one denies the past arrogancy of the colleges. Such attacks as Mr. Morrison's, however, will not help in bringing school and college together.

JAMES LUKENS MCCONAUGHY

To the Editor:

In the November, 1913, *School Review*, M. Locard has an article entitled "French in the Public High Schools." In trying to demonstrate that conversational French is inadvisable, M. Locard affirms: "It seems rational to say that French nationality, backed by education and experience, is the absolute requisite for any person who claims to teach French. A German, an American, a Japanese may have mastered the language to some extent, but with few exceptions, the standard of his pronunciation will always be below that of any mature Frenchman." Thus are we to conclude that the requisite for teaching French pronunciation is a good pronunciation? The French nation, as regards the teaching of English and German, has answered this question in the negative. In Paris the teaching of English is intrusted to Frenchmen. In visiting eight of the largest French *lycées*, I met but one native English teacher, and she was permitted to teach permanently only because she had been naturalized. French is taught in Germany by Germans with most excellent results. Professor Walter of Frankfurt, who evidently does not talk like a Frenchman, succeeds in getting a very superior pronunciation from his pupils. Professor Vietor of Marburg gives his students of English a pronunciation which is almost impeccable. We fear that M. Locard's statement will scarcely bear comprehensive examination. Pronunciation is not contagious; a little knowledge of the science of phonetics easily turns the balance against the native teacher. Then, too, the native teacher is generally entirely lacking in any scientific preparation for this work.

M. Locard also expresses a horror for the phonetic symbols. Again is he at variance with the practices of his own country. These very symbols are practically the contribution of the energetic and progressive French race to linguistic advancement. In Germany excellent results

are obtained by the use of the phonetic symbols. In England in many schools the ordinary orthography is laid aside during the first year. Professor Savory and Miss Parkington have been the pioneers in this movement. Professor Walter of Frankfurt and Professor Glaser of Marburg have adopted this plan, though not to so great an extent as in England. Of course if this method is in the hands of any other than an absolute master of the science, the enterprise is doomed in advance. Finally, the most up-to-date English series published in Paris, that of Professor Camerlynck, of the Lycée Saint Louis, uses the phonetic symbols to immense advantage. Can we then reasonably conclude that these phonetic symbols are grotesque and barbarous when the three most enlightened nations have embraced them as aids to efficiency?

What is the most advisable method of teaching French? We agree most decidedly that to teach pure conversational French is unwise. But M. Locard fails to discuss satisfactorily the question of teaching the very grammar he prizes so highly, by means of the spoken French. With grammar as an aim and spoken French as a means, can we not develop a method which is both effective and durable at the same time?

Learning irregular feminines of adjectives out of the book is pure drudgery, but when the teacher points out "une nouvelle cravate," or "une belle robe," or "une vieille maison," the application vivifies the word. The verb in action is almost an entirely different word from the dead, colorless vocable beside an English word. The use of such a method does not in any way preclude the possibility of laying solid grammatical foundations nor of showing very clearly the basic principles of the language.

If we adopt M. Locard's suggestion to let the high-school student of French revel in the delights of "comparative philology," and find "intellectual enjoyment in Latin quotations and etymological study derived therefrom, and in the careful analysis of each part of speech and in the discussion of the logical construction of every sentence," we may be sure that such a diet at the high-school age is bound to produce intellectual nausea.

ARTHUR GIBBON BOVEE

UNIVERSITY HIGH SCHOOL

BOOK REVIEWS

The Evolution of the Educational Ideal. By MABEL IRENE EMERSON. Boston: Houghton, Mifflin Co., 1914. Pp. x+185. $1.00 net, postpaid.

In 1905 Paul Monroe published his epoch-making *Textbook in the History of Education* which contained almost 800 pages. In the opening sentence of his preface he said: "This volume, while not pretending to be an exhaustive history of the subject, aims to give more than a superficial outline containing a summary of trite generalizations."

Emerson's *Evolution of the Educational Ideal* is a reversion to the type of textbooks in the history of education published before Monroe's and characterized in the last phrases of the sentence quoted from his preface. Emerson's book is perhaps the most attenuated summary of a long period that we have. It covers the whole time from ancient oriental education to the present in 185 pages. Chinese education is treated in four pages; education in India in three; Persian education in three; education among the Hebrews in three; Egyptian education in five; Greek education in eleven; Roman education in seven; and so on. In the treatment of individuals in the modern period we find one-half page devoted to Rabelais; one page to Montaigne; four pages to Bacon and Comenius; four pages to Locke; and twenty-one pages to the movement represented by Rousseau, Pestalozzi, and Froebel. Twenty pages are devoted to education and the state, and twenty-three pages to the American common school.

The book presents a striking contrast to the admirable series of "Riverside Educational Monographs" published by the same firm, in each of which we find an intensive and thorough treatment of one or a few topics. In general, progress in textbook construction has been in the direction of such intensive studies and away from the encyclopedic and superficial discussion of a wide range of topics.

S. C. P.

Health and the School. By FRANCES WILLISTON BURKS and JESSE D. BURKS. New York: D. Appleton & Co. Pp. xviii+393. $1.50.

The complaint is not infrequently heard that not enough positive data concerning conditions of health are extant and available to warrant present-day dogmatizing on standards of public hygiene, safety, and efficiency. On the other hand, it is admitted by all that judicious publicity of such facts as are known is the necessary first step toward human conservation and the most vital stimulus for further care and study of deterrent and vicious influences.

In no realm of life does this bear with such fitness as on the conditions of living that obtain in modern school life. The authors of this book, *Health and the School*, have succeeded with singular aptness and directness in presenting a much-discussed topic in a form easy to read, to comprehend, and to apply. The object or aim, as outlined, is indicated in the following: "This book sets forth the health problems which must be met in every school and family, and furnishes a working program for parents, school boards, and boards of health." The material is presented in the form of conferences on school-health problems by representative teachers and parents, a wise physician, a trained social worker, as well as a practical and successful business man.

All this takes its setting in four parts or divisions of the book somewhat naturally presented under the headings: "The Breakdown of the School in Its Health Program"; "The Opportunity of the School for Promoting Health"; "A Program of Child Hygiene"; "Socialized Health: A Forecast." Dipping into this more in detail one finds many most interesting topics worthy of mention and re-reading, wherein are evoked many critical questions that are bound to be called out by progressive thinkers on problems of this character, and in turn where one finds the best answers that the several groups of workers in the conference can give, each from his own point of view and information.

The style is a sort of formal conversation, the range of topics is sufficiently wide and varied to coax and sustain the reader's attention, and, perhaps most important of all, there is affixed a summary of suggested readings—books, articles, bulletins, and reports—all of which are selected with more relevancy to the central topics and with more felicity in detail than is provided in any other book of similar character.

D. P. MacMillan

Department of Child-Study
Chicago Public Schools

Petite phonétique comparée des principales langues européennes. Par Paul Passy. Leipzig-Berlin: B. G. Teubner, 1913. Pp. iv+145.

Mr. Passy's *Petite phonétique comparée*, now at hand in a second, revised edition, needs no reintroduction to the teachers of phonetics in American colleges and universities, who are well aware of the high character and authority of the book.

It may, however, not be out of place to call to it the attention of the teachers of modern languages in secondary schools who, desiring to insure a good pronunciation for their pupils, will find Mr. Passy's book an invaluable handbook and guide with which to broaden and deepen out of their own knowledge the usually rather perfunctory phonetical introductions of the elementary modern-language textbooks.

It seems safe to say that nowhere else is so much exact, reliable, pertinent information concerning the sounds of different languages and the habits of

speech of different people to be found in so clear, simple, I should almost like to say "popular," a form as here; no one need fear that any "special training" is necessary to understand the book and utilize it.

Undoubtedly an English edition might increase in America the field of usefulness of the book, and perhaps also extend it to some of the many teachers who are struggling in the public schools, especially in the large cities, with the peculiarities of pronunciation of pupils of Russian, Italian, Japanese, and other parentage. Even among these teachers some will be able to read it in French, and to them and to all others who are interested in improving their own pronunciation as well as that of their pupils, Mr. Passy's *Petite phonétique comparée* can be heartily recommended.

CHARLOTTE J. CIPRIANI

CHICAGO

The Teaching of Geography in Elementary Schools. By RICHARD E. DODGE and CLARA B. KIRCHWEY. Chicago: Rand McNally & Co., 1913. Pp. 248. $1.00.

This new book in the pedagogy of geography teaching represents the conclusions reached after many years' experience in the training of geography teachers, and of teaching the subject in the elementary school. "It is an attempt to organize the underlying principles which, from the standpoint of good geography and good teaching, are necessary before one can effectually attack the problem of framing a course of study in geography for elementary schools or of teaching any phase of this related whole." The following quotation may be considered as a statement of the thesis of the work: "Geography teaching requires primarily a good knowledge of the essential facts and principles of geography; for no teacher can teach that which he does not himself know. The second requirement is an understanding of the scope of school geography; of the relation of this part of the subject to other work in the same field; of the purposes of school geography and ways in which the subject may best be organized and presented so as to be of the most permanent value to the pupils." A full, clear, and incisive discussion of this thesis is given in chapters as follows: Scope and Purpose of School Geography Teaching; Organization of a Course of Study in Geography; Home Geography and the World Whole; Geography of the Intermediate Grades; The Principles of Geography; Geography in the Upper Grades; Relation of Geography to Other Subjects in the Curriculum; Geography and Expression Work; Place and Use of a Textbook in School Geography; Use and Misuse of Maps; Observational Work in Geography; Geography in Rural Schools; Industrial and Commercial Geography; Collateral Reading; Preparation, Organization, and Conduct of a Lesson; Use of Equipment; Museums, and an appendix giving lists of equipment and collateral reading, and some outlines of representative lessons.

Most books on the teaching of geography have been written by teachers

specially trained in other subjects, and in many cases their weaknesses are very obvious. Teachers of geography, therefore, will welcome this book written by authors who are not only capable teachers but equally capable specialists in geography—a most fortunate combination for the good of the cause. Every teacher of geography will find this a valuable book for study. Its statement of the fundamentals of elementary-school geography, the best method of procedure in the organization of the subject, the conduct of class work, and the essentials of a teacher's qualifications are sound both geographically and pedagogically. It is the best book of the kind yet written and its use will do much to accelerate better geography teaching.

GEORGE J. MILLER

STATE NORMAL SCHOOL
MANKATO, MINN.

Bookkeeping, Complete Course. By GEORGE W. MINER. New York: Ginn & Co., 1914. Pp. 334. $1.40.

This is a revision of the older book *Accounting and Business Practice*, by Moore and Miner. There are more supplementary exercises introduced throughout the book. The first and second sets are replaced by more elaborate ones. The chapter on single entry is relegated to the appendix and a set on corporation accounting is substituted. Sets 3, 5, 6, and 7 are identical in both books and set 4 is much the same.

The same general plan is followed. The fundamental principles are developed. Sets 1 and 2 use journal and ledger; sets 3 and 4 introduce cash sales and purchase books; set 5 presents consignments, drafts, bill-book and special-column cash-book; set 6 illustrates the use of special-column cash-book and journal and auxiliary ledgers.

The merits of the older book are too well known to need comment. The revised text seems to have lost none of the excellent qualities of its predecessor and to have gained by the additions which have been made.

GEORGE A. BEERS

LAKE HIGH SCHOOL
CHICAGO

Mathematical Wrinkles. By SAMUEL I. JONES. Published by the Author. Pp. viii+321. Cloth, $1.65 net.

This book would prove a valuable addition to the library or desk of every teacher of mathematics in secondary schools. Aside from furnishing a source of problems that may be drawn upon to supplement the regular classroom text in arithmetic, algebra, or geometry, it contains much other material of great interest not only to teachers but to students as well.

It contains chapters on Arithmetical Problems, Algebraic Problems, Geometrical Exercises, Miscellaneous Problems, Examination Questions, Answers

and Solutions to the Foregoing, Mathematical Recreations, Short Methods, Quotations on Mathematics, Mensuration, Miscellaneous Helps, and Tables.

Among the problems are a number of interesting old historical problems and puzzles. The chapter on mathematical recreations contains a valuable collection of recreations that may be used in the school, and contains an interesting account of the "fourth dimension" easily intelligible to pupils. The chapter on short methods should be of great value to teachers.

JAMES F. MILLIS

FRANCIS W. PARKER SCHOOL
CHICAGO, ILL.

Plant Life and Plant Uses. By J. G. COULTER.

Plant Life and Plant Uses is a book designed to give the boys and girls of secondary schools a knowledge of the ways plants live and their relation to man.

The language is very simple and close to that of the average high-school boy or girl. The author has eliminated all the technique possible in a book of this type. Because of this fact the book has been criticized as not being scientific enough to be used as a text in a science course. The facts, however, are clearly stated and are comprehensible to the youngest beginner.

The organization consists of a general discussion of the parts of the higher plants and the uses of each, followed by a more elaborated study in the succeeding chapters. The last two chapters are given over to the evolutionary sequence of plant life. The author stays close to his organization. No special treatment is given to the more economic phases of the subject. These topics are briefly discussed along with the subjects to which they are most closely related. There is such a demand in our high schools for a practical knowledge of botany, that I believe the author would have been justified in giving a more intense treatment of this feature.

The facts presented in the book are up to date and well chosen. For a class whose purpose is to learn of the activities and relations of plants, this is a very commendable text. Many teachers who must depend upon the text for the organization of their subject should be able to give a creditable course with this book.

C. E. MONTGOMERY

BLOOMINGTON, IND.

A Source Book of English History for the Use of Schools. Edited by ARTHUR D. INNES. Vol. I, 597–1603 A.D. Cambridge University Press, 1912.

This attempt by an English scholar to solve the problem of suitable source material for the use of secondary schools entails no substantial duplication of the work of American collectors. Of its 97 selections only some 17 appear in

even as complete a collection as Cheyney's *Readings*. The sources utilized are mainly chronicles and memoirs, and consequently almost wholly narrative. In fact a short selection from the dooms of Alfred gives the sole approach to anything of a constitutional or technical nature. The selections seem almost elementary as compared with the American collections, and are evidently designed rather for the purpose of awakening a love for the reading of the sources than for the study of historical problems. Typographically the volume is a model of what such a book should be. In marked contrast with the cramped appearance of the leaves of the American sourcebooks are its large-typed, well-spaced, and easily read pages. The usefulness and attractiveness of the work are further enhanced by some thirty well-chosen illustrations. Periods and events not usually stressed in American schools are well represented, e.g., the reign of William Rufus, the border warfare of the Scotch and English, and the French wars of the reign of Henry VIII. This, in addition to its fitness for enlivening supplemental reading, will give the book value to those already possessing copies of the American sourcebooks.

V. L. MINOR

UNIVERSITY HIGH SCHOOL

COMPOSITION

Handbook of Commercial English. By IVA L. LYERS WEBBER. Boston: The Palmer Co. Pp. iii+171.

This book undertakes to outline for commercial students a practical course in composition. It is suggestive and helpful for classes in technical high schools, but hardly suitable for students of college rank. The core of the book is "Correspondence."

Representative Essays in Modern Thought: A Basis for Composition. By H. R. STEEVES and F. H. RISTINE. New York: American Book Co. Pp. iii+533.

The authors belong to the comparatively new school of teachers who believe that *ideas*, not literary models and set exercises, should be the point of departure in teaching composition. The essays they have chosen are suitable for college students in the second semester of Freshman English. The selections, nineteen in all, are made from Arnold, Huxley, James, Mill, Morley, Tyndall, Hobhouse, and others.

Practical English Composition. By CAROLYN M. GERRICK and MARGARET CUNNINGHAM. Boston: D. C. Heath & Co. Pp. iii+428. $1.00.

The text is somewhat of an innovation in that it treats description as a form simpler than narration. Using these two forms as the "whole composi-

tion," the authors proceed to the study of the paragraph, the sentence, words, letter-writing; then follow with exposition and argument, figures of speech and poetic form, ending with suggestive chapters on "supplementary reading" and punctuation.

Two Years' Course in English Composition. By CHARLES LANE HANSON. Boston: Ginn & Co.

An admirable book; proceeding from the study of the larger to the smaller units; based throughout on the inductive method; containing a chapter on grammar suitable for review work; subordinating the forms of discourse. The text contains many suggestive exercises. It says little about oral composition.

The School Paper. By CHARLES B. GLEASON and GEORGE I. LYNN. New York: Hinds, Noble & Eldredge. Pp. 40. $0.50.

This pamphlet explains every step in the management of a high-school paper. It is invaluable advice for principals and teachers who contemplate launching a school publication.

Everyday English. By FRANKLIN T. BAKER and ASHLEY H. THORNDIKE. New York: Macmillan. Pp. v+336.

This book is a valuable text for composition work in secondary schools. Part I is a survey of English grammar, characterized by the omission of needless subtleties. The sentence is properly made the objective point of study. Part II, "Composition," is based upon the principles that language is primarily oral; that constant practice is necessary to skill in language; and that form is less important than ideas. Part II is illustrated, comparatively an innovation in composition books.

EDUCATION

Experimentelle Pädagogik. Von W. A. LAY. (2d ed.) (Aus Natur und Geisteswelt, Vol. ccxxiv.) Teubner, 1912. Pp. vii+137. M. 1.25.

The first edition of this work was published in 1908, one year after Meutmann's large work on the same subject. This book aims to present to the general reader who is not able to read extensively on the subject a view of the most important results of experimental pedagogy and the practical conclusions which are to be drawn from them. The field covered is wide, including, in addition to the theory and methods of experimentation, heredity, the effect of physical and social environment upon mental development and functioning, sex differences, mental development in the child, and the mental processes involved in the subjects of the school curriculum. In spite of the range of subjects which is covered the discussion often goes into a good deal of detail

which produces an inevitable loss of perspective. Moreover, the details which are given, and which give an air of erudition to the book, are not accompanied with the bibliographical references which are necessary to enable the reader to verify them or to follow them up further. The treatment is, in fact, in many parts one-sided and superficial.

The second edition is rewritten, but not much new material is added. It contains only ten pages more than the first edition and these seem to be largely taken up with amplification rather than with addition. Such glaring deficiencies appear as a failure to mention Dearborn or Huey in the account of reading, or of the work of Cornman or Rice in arithmetic. The book will be of use among American readers only to specialists in experimental pedagogy.

MATHEMATICS

A Manual of Laboratory Exercises in Physics. By FREDERICK R. GORTON. New York: D. Appleton & Co., 1912. Pp. xv+166.

A book written primarily to accompany the author's *High School Course in Physics*, although it can be used with any good text on secondary physics. There are more exercises presented than can be performed in an ordinary course of one year. There are fifty-two exercises, many of which are presented in two or more ways. This gives the instructor considerable latitude in the selection of the particular exercises for his course. The same general order is given for each exercise, which is: name, object, materials, description, and lastly, a set of review questions.

The descriptions are written in a clear and understandable way, so that the pupil will have little difficulty in his work. A price list of the apparatus used in the book is appended. There are, too, a number of tables of constants used in the exercises. There are also fine zinc etchings of a protractor, vernier scale, and English metric scale printed on a good quality of cardboard. These are to be cut out and used by the pupil as occasion requires. There are fifty-five drawings and figures. The book is well made and is intended for use.

Plane Geometry. By WILLIAM BETZ and HARRISON E. WEBB. Boston: Ginn & Co., 1912. Pp. 332.

This book is another of the few texts on geometry that have appeared in recent years that make a wide departure from the traditional treatment of the subject. To those teachers who are not afraid to experiment in the attempt to psychologize the teaching of geometry and to make it more practical this new text will make an appeal.

The traditional formal course is preceded in the present volume by five or six weeks of work on concrete or observational geometry. Many teachers have found this a successful plan, in that it gives skill early in the course in the accurate construction of the figures of geometry, and in that it vitalizes the

content of the definitions of geometry before they are encountered in the formal work, thus avoiding the simultaneous appearance of too many difficulties in the beginning that tend to discourage the pupil.

The subject is vitalized through the use of a considerable number of good applied problems. A slight use is made of the suggestive method in the treatment of theorems. Through assumptions and practical measurements some of the traditional difficulties of the subject are eliminated. Use of the theory of limits in the proofs of incommensurable cases of theorems and the theorems on the circle is avoided through assumptions and practical measurements. The trigonometric functions are introduced in connection with similar figures.

A possible criticism of the text is its large size—332 pages (some texts contain only a little over 200 pages), and the wealth of details that may tend to becloud the essentials of the subject in the pupil's mind.

Complete School Algebra. By HERBERT E. HAWKES, WILLIAM A. LUBY, and FRANK C. TOUTON. Boston: Ginn & Co., 1912. Pp. xii+507. $1.25.

The *Complete School Algebra* includes in a single volume, with the necessary adaptation and abridgement, all the material of the *First Course in Algebra* and the *Second Course in Algebra* by the same authors with which teachers of mathematics generally are familiar. It is designed for those schools which find a one-book course suited to their needs.

The first twenty-three chapters contain the work usually done in the first year of the average high school. Following these is review material, each topic covered in the first part of the book being given a broader and more advanced treatment. New matter is introduced throughout, and many new applications are given in order to make a fresh and inviting appeal to the student. In the remaining chapters those advanced topics are presented that are required for college entrance and are taught in the average high school.

Through the problem material algebra is correlated with arithmetic, geometry, and physics, as is true of most of the new texts. Teachers will appreciate the problems in this book. It is encouraging to see that the so-called "informational problems," manufactured from tables of statistics, problems that are of little interest to boys and girls, that are unreal and give the pupil an erroneous idea of modern business methods, are conspicuously absent from the text.

BOOKS RECEIVED

LANGUAGES

Bruce, Mary Stone. Recit et contes de la guerre de 1870. New York: Henry Holt & Co., 1914. Pp. vi+174. $0.60.

Gaston, Charles Robert. Macaulay's Speeches on Copyright and Lincoln's Address at Cooper Union. Boston: Ginn & Co., 1914. Pp. v+101. $0.25.

Goldschmidt, Thora. Goldschmidt's Bildertafeln für den Unterricht im Deutschen. Leipzig: Ferdinand Hirt u. Sohn, 1914. Pp. 112. M. 3.50.

Lehmann, Edvard. Erziehung zur Arbeit. Leipzig: B. G. Teubner, 1914. Pp. 101. M. 1.25.

Leonard, Arthur Willis. Stevenson: Kidnapped. Chicago: Scott, Foresman & Co., 1914. Pp. 301. $0.35.

Lewis, Elizabeth. George MacDonald: The Princess and Curdie. Philadelphia: J. B. Lippincott Co., 1914. Pp. 126. $0.50.

Reid, O. Leon. Lockhart's Life of Scott. New York: Macmillan, 1914. Pp. xiii+262. $0.25.

Report of the Joint Committee on Grammatical Nomenclature. Reprinted from the Proceedings of the N.E.A., 1913. Pp. 65.

Rohl, Hans. Geschichte der deutschen Dichtung. Berlin: B. G. Teubner, 1914. Pp. x+317. M. 2.50.

Rounds, C. R. Holmes: The Autocrat of the Breakfast-Table. New York: Macmillan, 1914. Pp. xxi+364. $0.25.

Sand, George. François le Champi, Edited by Colbert Searles. New York: Oxford University Press, 1914. Pp. xxi+291. $0.60.

Young, W. T. Introduction to the Study of English Literature. New York: G. P. Putnam's Sons, 1914. Pp. vii+238. $0.75.

EDUCATION

Ayres, Leonard P. Some Conditions Affecting Problems of Industrial Education in Seventy-eight American School Systems. New York: Division of Education, Russell Sage Foundation. Pp. 23. $0.10.

Barnard, H. C. The Little Schools of Port-Royal. Cambridge: University Press, 1913. Pp. x+263.

Boyd, William. From Locke to Montessori. New York: Henry Holt & Co., 1914. Pp. 272. $1.25.

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Heiermann, Francis. The Teaching of Sex Hygiene in Our Schools. Reprinted from The Lancet-Clinic, 1914. Pp. 12.

Hill, Patty Smith. Experimental Studies in Kindergarten Theory and Practice. New York: Teachers College, Columbia University, 1914. Pp. 70.

Hood, Mary C. For Girls and the Mothers of Girls. Indianapolis: Bobbs-Merrill Co., 1914. Pp. 157.

Hutchinson, J. Howard. School Costs and School Accounting. New York: Teachers College, Columbia University. Pp. vi+151. $1.50.

McCracken, Thomas C. (ed.). Handbook of Opportunities for Vocational Training in Boston. Boston: 6 Marlborough Street, 1914. Pp. ix+301.

Miller, James C. Rural Schools of Canada. New York: Teachers College, Columbia University, 1913. Pp. xi+236. $2.50.

Puffer, J. Adams. Vocational Guidance. Chicago: Rand McNally & Co., 1914. Pp. 306. $1.25.

Sharp, H. Progress of Education in India, 1907–1912. Calcutta: Superintendent of Government Printing, India, 1914. Pp. 239. Rs. 2, or 3*s*.

Steinhardt, Irving David. Ten Sex Talks to Girls. Philadelphia: J. B. Lippincott Co., 1914. Pp. 193. $1.00.

Thorndike, Edward L. Educational Psychology. Vol. III. New York: Teachers College, Columbia University. Pp. x+408. $2.50.

MISCELLANEOUS

Couturat, Louis. Translation by Lydia Gillingham Robinson. The Algebra of Logic. Chicago: The Open Court Publishing Co., 1914. Pp. xiv+98. $1.50.

Fenton, H. J. Constitutional Law. Annapolis: The United States Naval Institute, 1914. Pp. 351.

Forty-fourth Annual Report of the School Committee of Dover, N.H. Dover: Geo. J. Foster & Co., 1914. Pp. 67.

Kennedy, J. C., and others. Wages and Family Budgets in the Chicago Stockyards District. Chicago: University of Chicago Press, 1914. Pp. 80. $0.25.

Longford, Joseph H. The Evolution of New Japan. Cambridge: The University Press, 1913. Pp. 166. $0.40.

Yearbook and List of Active Members of the National Education Association. Ann Arbor, Mich.: Secretary's Office, 1913. Pp. iii+386.

SCIENCE

Athletic Handbook for the Philippine Public Schools. Manila: Bureau of Printing, 1913. Pp. 149.

Crawshaw, Fred D. Furniture Design for Schools and Shops. Peoria, Ill.: The Manual Arts Press. Pp. 132. $1.00.

Muller, Theodore. Industrial Fiber Plants of the Philippines. Manila: Bureau of Printing, 1913. Pp. 157.

Royce, Katharine. Enriques' Problems of Science. Chicago: Open Court Publishing Co., 1914. Pp. xvi+392. $2.50.

Russell, Edward J. The Fertility of the Soil. Cambridge: The University Press, 1913. Pp. 128. $0.40.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, University of Chicago

Bawden, William T. The Richmond convention of the Department of Superintendence. Voca. Educa. 3:361–68. (My. '14.)

Beyer, Thomas Percival. Tragedy and treason in education. Dial 56:338–39. (16 Ap. '14.)

Bloomfield, Meyer. School and employment. Voca. Educa. 3:319–26. (My. '14.)

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Brown, Henry E. A plan for the reorganization of the American public high school. School R. 22:289–301. (My. '14.)

Burkholder, E. Catherine. An eighth-grade newspaper. El. School T. 14:418–22. (My. '14.)

Butler, Nicholas Murray. True vocational preparation. Educa. R. 47: 499–501. (My. '14.)

Cates, E. E. The teaching of history in the secondary schools. Educa. 34: 491–500. (Ap. '14.)

Clark, Bertha May. Humanism and efficiency. Educa. R. 47:486–98. (My. '14.)

Davies, G. R. Elements in arithmetical ability. J. of Educa. Psychol. 5:131–40. (Mr. '14.)

(A) defeat for religious education. Lit. D. 48:829. (11 Ap. '14.)

Farrell, Elizabeth E. A study of the school inquiry report on ungraded classes. Psychol. Clinic 8:29–47. (Ap. '14.)

Ford, Guy Stanton. The library and the graduate school. Educa. R. 47: 444–56. (My. '14.)

Frailey, L. E., and Crain, C. M. Correlation of excellence in different school subjects based on a study of school grades. J. of Educa. Psychol. 5:141–54. (Mr. '14.)

[1] *Abbreviations.*—Cent., Century; Educa., Education; Educa. R., Educational Review; El. School T., Elementary School Teacher; Harp. W., Harper's Weekly; J. of Educa. (Bost.), Journal of Education, Boston; J. of Educa. Psychol., Journal of Educational Psychology; Lit. D., Literary Digest; Liv. Age, Living Age; Outl., Outlook; Pop. Sci. Mo., Popular Science Monthly; Psychol. Clinic, Psychological Clinic; R. of Rs., Review of Reviews; School R., School Review; Sci. Am., Scientific American; Tech. World M., Technical World Magazine; Voca. Educa., Vocational Education.

Gathany, J. Madison. The giving of history examinations. Educa. 34:514–21. (Ap. '14.)

Goddard, Harold C. What is wrong with the college? Century 88:49–55. (My. '14.)

Greenwood, James M. Vocational guidance in high school. Educa. R. 47: 457–68. (My. '14.)

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Gustafson, Lewis. An endowed trade school in a large city. Voca. Educa. 3:351–60. (My. '14.)

Hall, Walter P. Why I have a bad education. Outl. 106:848–52. (18 Ap. '14.)

Harvey, Fred. The case of Jack the dullard. Good Housekeeping 58:224–30. (Fe. '14.)

Heniger, A. Minnie Herts. Making Bible stories plain. Good Housekeeping 58:331–38. (Mr. '14.)

Hewins, Nellie Priscilla. The doctrine of formal discipline in the light of experimental investigation. J. of Educa. Psychol. 5:168–74. (Mr. '14.)

Judd, Charles H. Some observations in German schools. El. School T. 14:437–44. (My. '14.)

Kingsley, Clarence D. New aims of the modern high school. J. of Educa. (Bost.) 79:458–59, 64. (23 Ap. '14.)

Sixth of a series of papers on the reorganization of secondary education.

Leavitt, Frank M. Co-operation of the schools in reducing child labor. Voca. Educa. 3:344–50. (My. '14.)

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Lennes, N. J. Mathematics for culture. Educa. R. 47:469–77. (My. '14.)

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New England Association of Teachers of English, Committee. Report: the training of English teachers. Educa. 34:473–90. (Ap. '14.)
Payne, E. George. A recent educational development in Germany—the commercial college. Voca. Educa. 3:369–75. (My. '14.)
Perry, Ralph Barton. The teaching of ideals. School R. 22:334–38. (My. '14.)
Rational geography. Lit. D. 48:897. (18 Ap. '14.)
Russell, James E. Outlines of a practical education. Good Housekeeping 58:339–44. (Mr. '14.)
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Scofield, F. A. The function of the intermediate school or the junior high school. J. of Educa. (Bost.) 79:429–30. (16 Ap. '14.)
Selvidge, Robert W. State control of entrance to the industries. Voca. Educa. 3:338–43. (My. '14.)
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Trettien, A. W. The exceptional child in school. Psychol. Clinic 8:48–51. (Ap. '14.)
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